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ABSTRACT

These eighteen articles concern approaches for dealing with the handicapped student in vocational education. The first article addresses the diversity of teaching approaches. The others focus on (1) team teaching (and cooperation with other subject area teachers); (2) the SERVE (Special Education Rehabilitation Vocational Education) Center concept; (3) use of a learning manager; (4) special carpentry class for handicapped students; (5) prevocational skills assessment program for planning individualized programs; (6) preparing nonhandicapped students for mainstreaming; (7) entrepreneurship using talents of trainable mentally handicapped; (8) improving success rate in industrial arts; (9) results of three prescriptive laws now in effect; (10) "tactual print approach" used with blind students in industrial arts shop; (11) teaching strategies for blind students in photography; (12) community involvement in vocational education and work experience for severely handicapped secondary students; (13) vocational education for educable emotionally mentally handicapped and trainable mentally handicapped in Shelby, North Carolina; (14) Laramie Work-Experience Program; (15) the line production method used with mentally retarded; (16) the Westport, Connecticut, Special Education Career/Vocational Program (on-the-job training); and (17) teaching techniques for mainstreaming. Appendixes include these lists: definitions of specialized terms, 100 jobs mentally retarded people perform, recommended resources, and national organizations which are sources of information. (YLB)

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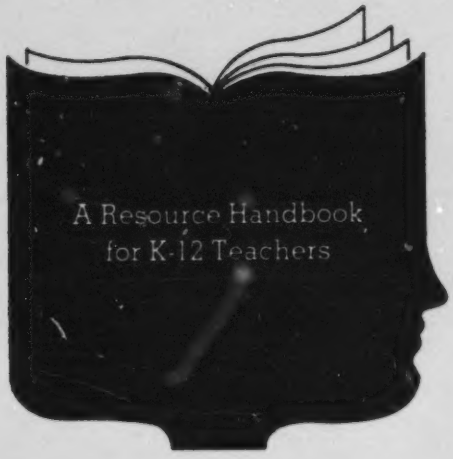
Mary Jane Palomaki, Editor

Teaching
Handicapped
Students

VOCATIONAL EDUCATION



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DEDICATION

The General Assembly of the United Nations passed a resolution declaring that the year 1981 be known as "The International Year of the Disabled Person." This is a tribute to the many professional and laypersons who have quietly been working to assist handicapped persons and help us better understand their needs.

Over a period of years, I have personally observed vocational teachers with their unique methods of encouraging students to achieve their goals. Many of these teachers only partly realize how knowledgeable and creative they are. I would like to dedicate this book to the many vocational teachers and coordinators who daily rebuild confidence, rekindle hope, and impart knowledge to the young people who are set apart by handicaps or learning disabilities and not especially welcomed by society in general.

There are as many approaches in dealing with the handicapped student as there are teachers. The collection of articles here seems to me to blend both theory and practical approach. It is this editor's hope that the readers will glean an undersatnding here, a strategy there, that will enable them to initiate a new approach or reinforce already existing classroom procedures. If this be the case, your editor will have achieved her goal.

This editor is indebted to all she encountered in her professional career—those who assisted her as well as those who challenged her. Of special note, my eternal thanks to my husband, Kermit, for his understanding and support during these extremely challenging years.

M.J.P.

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FOREWORD

Prepared by the

NEA Committee on Education of the Handicapped

Public Law 94-142, The Education for All Handicapped Children Act, the major federal education legislation for providing a free appropriate education for all handicapped children, must be in compliance with Section 504 of the Rehabilitation Act of 1973. Part D of Section 504 states, in part:

> The quality of the educational services provided to handicapped students must be equal to that of the services provided to nonhandicapped students; thus, handicapped students' teachers must be trained in the instruction of persons with the handicap in question and *appropriate materials and equipment must be available.*

This federal regulation is supported by NEA policy. Point (e) of NEA Resolution 79-32, Education for All Handicapped Children, reads:

> The appropriateness of educational methods, materials, and supportive services must be determined in cooperation with classroom teachers.

In the context of federal education policy and NEA policy, members of the NEA Committee on Education of the Handicapped have reviewed *Teaching Handicapped Students Vocational Education.* Members of the Committee are teachers of English, social Studies, mathematics, special education, and science, who teach both general and handicapped students in elementary and high school.

The Committee cannot emphasize too strongly the importance of teachers of regular and special education working together. The Committee would also like to urge both groups of educators to use these publications in teaching content areas to handicapped students. Members of the Committee were particularly pleased that teachers wrote these materials, in an effort to successfully teach the handicapped in the least restrictive environment. Because of their firsthand knowledge of proper teaching strategies, teachers are the best source of information to aid their colleagues.

The NEA supports P.L. 94-142 because the Association is committed to education processes which allow all students to become constructive, functioning members of their communities. To this end, when handicapped students are appropriately placed in classrooms with nonhandicapped students, teachers need instructional strategies which provide for individual learning differences. This is not new. However, most regular education teachers have not been trained, as mandated by law, in pre-service or in-service experiences to work with students with handicapping conditions. Teachers are eager to carry out the mandate of the law, but they may shy away from or even object to teaching these students because of this lack of training.

The so-called "mainstreamed" classroom presents new challenges to regular classroom teachers because of the added responsibility of teaching students with handicapping conditions. It is particularly important, therefore, to understand the student with a handicapping condition as a whole person in order to emphasize this commonality among all students.

The Editor

Mary Jane Palomaki is a teacher of Child Care and Development and Director of the Early Childhood Center, Delaware County Vocational-Technical Schools, Broomall, Pennsylvania. Her selections for this book represent materials which she feels are especially pertinent and practical for vocational education classroom teachers.

EDITOR'S INTRODUCTION

It appears that there is no such thing as an equal education. There is only, at best, an equal opportunity to obtain an education. Specific disabilities may limit students from selecting certain careers.

The thrust in education today in the United States is toward accommodating the exceptional student in the public school setting. Recent federal legislation requires that physically and mentally disabled students be educated with their nondisabled peers to the greatest extent possible. As a consequence, an increasing number of young people with physical disabilities are now attending regular schools and are being integrated in regular classes: the blind, the partially sighted, the deaf and hard of hearing, individuals with orthopedic or neuromuscular impairments, and those with chronic health problems. Like their nondisabled peers, these students have goals that are not much different from their peers. There is no "psychology of disability."

The high school student who has some impairment is first and foremost an adolescent—with the same basic needs, desires, and hopes common to all adolescents. Physically disabled adolescents, like their nondisabled peers, may have no problems, few problems, or many problems. When problems exist, they are not necessarily related to their disability. But the fact remains that for some students physical impairment will directly or indirectly present obstacles to academic, career, and personal-social adjustments.

We can perhaps best express our philosophy by the words of Leo Buscaglia, and we hope you will at least remember them as you work with your disabled student.

- Remember that the disabled are their own persons....

- Remember that each person who is disabled is different, and no matter what label is attached for the convenience of others, is still a totally "unique" person....

- Remember that the persons with disabilities are *persons* first and disabled individuals secondly. These persons have the same right to self-actualization as any others—at their own rate, in their own way, and by means of their own tools. Only *they* can suffer their non-being or find *their* "selves."

- Remember that the disabled have the same needs that you have, to love and be loved, to learn, to share, to grow and to experience, in the same world you live in. They have no separate world. There is only *one* world.

- Remember that the disabled have the same right as you to fall, to fail, to suffer, to decry, to cry, to curse, to despair. To protect them from these experiences is to keep them from life.

- Remember that only those who are disabled can show or tell you what is possible for them. We who serve them must be attentive, attuned observers.

- Remember that the disabled must do for themselves. We can supply the alternatives, the possibilities, the necessary tools—but only they can put these things into action. We can only stand fast, be present to reinforce, encourage, hope and help, when we can.

- Remember that the disabled, like ourselves, are entitled to life as we know it. They, too, must decide to live it fully in peace, joy and love, with what they are and what they have, or to sit back in lacrimal apathy and await death.

- Remember that persons with disabilities, no matter how disabled, have a limitless potential for becoming—

not what *we* desire them to become, but what is within *them* to become.

• Remember that the disabled must find their own manner of doing things.... There are many ways of tying shoes, drinking from a glass, finding one's way to a bus stop. There are many ways of learning and adjusting. They must find the best way for them.

• Remember that the disabled also need the world, and others, in order to learn. All learning does not take place in the protected environment of the home or in a classroom, as many people believe. The world is a classroom. All mankind are teachers. There is no meaningless experience....

• Remember that all persons with disabilities have a right to honesty about themselves, about you, and about their condition. To be dishonest with them is the most terrible disservice one can perform. Honesty forms the only solid base upon which all growth can take place....

(Adapted from *Guidance and Support Services for High School Students with Physical Disabilities*, Technical Education Research Center, Inc., 1978.)

Teaching
Handicapped
Students

VOCATIONAL EDUCATION

1. A POINT OF VIEW

by Mary Jane Palomaki

The author is also the Editor of this book. She is a teacher of Child Care and Development and Director of the Early Childhood Center, Delaware County Vocational-Technical Schools, Broomall, Pennsylvania.

I still remember my first experience with a handicapped student, even though it was more than 15 years ago. It was in an advanced sewing class in a comprehensive high school. One of the students asked me to check the length of her skirt hem. I folded the fabric under and as my hands brushed against her legs, they came in contact with something hard—two wooden legs. I tried, and hopefully succeeded at the time, to keep my shock from showing. I knew that she had an awkward walk, but I had never checked into it any further.

The following year I had another student who had three fingers missing on her right hand. I recall asking her quietly and in private how I could help her with her sewing project. She replied, "Nothing—treat me like everyone else; no better, no worse." To my amazement, she successfully completed a tailoring project of a wool skirt and a lined sleeveless jacket—plaid, no less.

Those two students provided my first epxeriences with physically handicapped students in the classroom. Later, I had students with cerebral palsy. One in particular had a very defeatist and negative attitude about her abilities. When she took her first written test, her paper looked as if she had taken the right facts, put them in a large basket and, after shuffling them a bit, poured them out onto her paper. After several telephone calls, I found out how I could help her learn to get facts straight. From her doctor I learned that she could do anything that a 10-year-old child could do, as far as lifting and physical activity was concerned.

I also learned that she had to think in order to perform a physical activity that we would do automatically. Only through conscious effort could she walk in a normal fashion and stand up straight, giving herself silent sequential directions. This same mental effort was required to get in or out of a chair.

Armed with these facts, I proceeded to insist, slowly, calmly, and very consistently that she meet the same requirements as other students, within the limits set by her doctor. There were some tears, and I had to talk to some of her classmates, who thought I was being unfair to her. As she progressed, however, the classmates' resistance to my methods disappeared. She was never allowed in the kitchen at home, so making jello was an achievement. Having her in class for 15 hours a week for two years made the progress more visible. I still have contact with her; she has an interesting and well-paying job, requiring quite a bit of responsibility. The work is not with young children, but in an area for which she had greater ability and aptitude.

In our Early Childhood Center, we have had several preschool children with serious disabilities, and the most difficult problem for me was to make my students understand that they were not being good to the child when they treated him or her differently. We, in cooperation with the parents, set up guidelines that were to be followed in dealing with the child. Again, it takes great consistency and determination, sprinkled with liberal doses of warmth and affection, to see progress in young people. I remember one child with hip problems who was delighted when I told her in a very businesslike voice to stop what she was doing, immediately.

In September our class lists have some handicapped students identified, but there is another group that is not identified. These are the learning disabled and emotionally damaged students. They drift by, never really learning anything well. with poor attendance records, usually disliking school and adults in general. These young people are often unhappy, sometimes scared, and narrow in scope and experience.

This is when being a good teacher is a little like being a good detective. Most vocational classes have a certain percentage of these students. Whether they chose a vocation or whether one is chosen for them, they exist and must be dealt with. Perhaps if a teacher had these students only once a day or three times a week, they could slide by without having to deal with their problems, but with 15 hours a week, there must be some acceptable solutions found for mutual survival.

Three hours a day, five days a week, and up to three years in one shop can be a tremendous advantage for both

student and vocational teacher. Hopefully, both teacher and student, when they get to know each other well, will learn to respect each other. Another benefit is the fact that many young people are searching for role models, and this type of classroom can provide for that need.

The first month and most of the second month of school are spent in close observation of my new students. I am looking for certain learning styles, as well as testing and checking reading abilities and levels (we are fortunate to have a reading teacher in our vo-tech system). I am also looking for physical problems that show up in the actions of the student, their attention span, and social as well as general intelligence—to list a few of the items.

Many vocational students appear to be right-hemisphere learners, learning better by hands-on experience first, then "backing up" to the theory. They like to discover for themselves, tend to be more creative, and learn concepts better by story. It is more difficult for them to learn in a formal classroom setting. Since many of the teachers in the comprehensive schools use more left-hemisphere activities, such as reading, writing, arithmetic, sequential or analytical activities, these students are at a disadvantage. When critics of education champion the theme Back to Basics, they are continuing to place these learning disability students at a disadvantage. Once I am reasonably certain of my students' learning style and can direct their classroom work toward that style, the tension eases up almost immediately.

Another major stumbling block is reading difficulties. Fortunately in my class there are advanced students who had, or may still have, reading problems; they are able to put new students with poor reading levels at ease. Students need to continue learning how to read in my class. I will help them, but I refuse to carry them without real effort on their part. For students who have trouble with reading, I use the *Orator* element in my IBM typewriter. I have found that fewer sentences to a paragraph, wider margins, and all material double spaced is less likely to overwhelm the student. (I liken it to a young child who sees a big heaping of food on a small platter. The child would be more likely to eat if there were smaller amounts on a large platter.)

Some of the physical problems that have shown up through observation are many cases of anemia and migraine headaches, several cases of hyperglycemia—the normal "not enough of the right foods" in the diet—lack of sleep and sleeping problems, and emotional problems causing the physical body to break down. (Someone once asked me how I knew when a student had made progress. One of my measures of improvement is if migraine headaches disappear completely.) These are all in the range of normal, but the degree of occurrence is often more than normal and leads not only to definite school problems but problems in personal relationships as well.

Attention span can be lengthened, and we have seen examples in both the Early Childhood Center and in the high school classroom. One student I knew had the attention span of a "peanut." When she decided she was not "dumb" (at the time she was on a third-grade reading level), she decided to lengthen her attention span herself. One day while I was explaining some new material, the students were sitting on chairs that were placed in a circle. The student in question was sitting two chairs away from me. After about ten minutes, she very quietly got up and sat on the floor immediately in front of her chair. I looked over at her and saw that she was paying very close attention to what I was saying, so I let it go. Ten minutes later, she quietly got up and resumed her original seat. After class was over, I talked to her about it, and she said, "When I change my physical position I can listen to what you are saying longer." And the amazing thing, no one else copied her; rather they respected her efforts to help herself. Stretching attention span can be taught.

As to general intelligence, after you have the trust of students and they tell you how they take tests, it is no wonder that we do not have accurate information on some of these special-needs students. I have developed some informal strategies that work for me in trying to figure out a student's level of ability. When I began teaching at Marple Vocational Technical School, I tried to keep track of every student all the time. However, when you have two classrooms, a storeroom, two bathrooms and an outside patio, it becomes an impossible task. As I thought about it, I adopted the policy of spot checking, giving the advanced students some responsibility, and using the concept of basic trust. Students can operate outside the guidelines, but usually for a short time only. When students consistently outmaneuver, see their boy friends by time arrangements, and always "play dumb" at the right time, they must have ability. Remember, young people communicate through body language, through slang, as well as through their dress and makeup.

There are other ways of observing intelligence—a sense of humor requires ability, so does seeing a "dirty" or other meaning in what was said. When students observe enough to believe they have ability, many of them really take off fast in quest of their goal.

While most testing has been written by tradition, there are many other ways of testing as well. Very useful are practical tests in which the grade is obtained by completing a specific objective or by performing a specific action successfully. We use flash cards for individual tests, especially on vocabulary lessons. Sometimes the test may take the form of an advanced student helping a newcomer complete a certain task. It has been shown by experience that students who succeed in such tests have the courage to try again the written test form and, more often than not, are able to test with higher scores.

Another suggestion is to give students mainstreamed for the first time a mark of pass/fail. When ready, a student can then be placed in the formal grading schedule. It often gives the little extra boost needed to keep the student from complete discouragement.

A trend has been developing in my classes over a period of years: the students learn the Child Care and Development curriculum first for their personal growth, and then only in selected areas. Later they go back and learn the curriculum for the purpose of developing competency in working with young children. The students who have gone through this dual process seem more likely to retain what academic and interpersonal skills they have acquired.

Remember, what works for one person may not work for another. But with the determination to keep trying, observing, and learning, you will develop strategies that work for you. Some experiences from other vocational teachers may help illustrate this point.

Jim Carroll of Juneau, Alaska, is a prevocational special education teacher at Juneau-Douglas High School. Part of his job is to place and supervise special education students in various vocational shops. Here are several suggestions he makes for assisting students prepare for their jobs after graduation.

In order to leave Juneau, it is necessary either to fly or go by ferryboat. Understanding and being able to read a schedule is very necessary for jobs outside the Juneau area. Also, because there are four time zones in Alaska, the students need practice in planning when to leave in order to arrive on time. Mapreading is another very important student skill, and they are given instructions for land and water mapreading.

When students need to have a chat with the principal, Jim invites the principal to stop by the room. Discussion usually is easier and problems are better resolved in this manner than in the formal atmosphere of the principal's office.

Jim Campbell teaches photo technology in the Delaware County Vocational Technical School System, Boomall, Pennsylvania. His previous teaching position was at the Philadelphia School for the Deaf. Students in his printing class were either deaf or had severely impaired hearing losses. Jim shares some teaching strategies that have worked for him and his students. Hopefully, you may find them of interest.

Jim found that one of the more difficult parts of his teaching preparation was to find ways of explaining abstract concepts to his students. For example, when the lesson for the day involved the concept of grain and texture of photographs, the students understood better if Jim secured various grades of sandpaper. Pieces of sandpaper were matched with the photographs of various grain. Then the student could feel the sandpaper while studying the photo texture with a magnifying glass. The words grain and texture were written on the board, and the whole process was reinforced until the student understood.

In teaching tonal values, his visual aid was an old paint chip chart of one color, with the hues ranging from the lighter hue to the darkest hue.

As a safety precaution the lights in the darkroom are tied into the fire alarm system. The lights blink off and on as the bell rings.

Jim makes some suggestions about your voice and speaking habits when dealing with a deaf or severely hearing-impaired student. Face the student and speak clearly. It is not necessary to overenunciate, nor is it necessary to raise the volume of your voice.

When introducing a new tool, walk over to the student and name the tool several times, allowing the student to observe you closely. Each student must have this opportunity. The name should also be printed on the blackboard.

Jack Grallnick, a Building Trades Maintenance instructor at the Aston Vocational Technical School, Aston, Pennsylvania, revealed the care behind his teaching approach to working with retarded students. Jack said, "I believe in making my students feel important, regardless of the students' mental, physical, or emotional problems." Jack invariably addresses the students as "Miss" or "Mister."

In Jack's class retarded students are given a concentrated program in one phase of our varied course of study. For example, a physically capable student might be taught the manual aspects of painting, and then be allowed to practice for a period of time. The student is then assigned a painting job outside the shop but within the confines of the school. The work is closely supervised.

Jack tells us that the ultimate aim is to prepare these students to work with a painting contractor. The student, on account of difficulties with reading and math, cannot be depended upon to read labels or follow written directions. The employer will need to be advised of the student's limitations in these areas and the need for explicit oral directions. However, he has found his students dedicated and eager to please, so they more than make up for their lack of basic skills.

Mainstreaming is another way to provide for the vocational needs of some handicapped students. It has been successful for the placement and graduation of:

- a legally blind student in Commercial Art
- a legally blind student in Communication Technology
- a socially and emotionally disturbed student in Electronics Shop who spent much of the first 12 years of childhood in an institution for the men-

tally retarded but who recently has graduated from an Ivy League college with a major in Theoretical Electrical Engineering
- a wheelchair-bound student in electrical technology
- a physically impaired student in the school employment cooperative education program, who now owns and operates his own establishment
- six hearing-impaired students now employed in their area of career choice.

In sum we can say that there are as many ways of helping handicapped students as there are students and teachers. As teachers we should remain open to the possible learning styles of every student.

2. TEAM TEACHING OF SPECIAL-NEEDS STUDENTS IN JUNIOR HIGH VOCATIONAL EDUCATION

by Ronald D. Yuill

Team teaching and cooperation with other subject area teachers appear to be the key for Lafayette, Indiana, special-needs students. The author includes in his article some additional pages of notes—suggestions of specific projects, with hints and results, both pro and con. These pages are included as a supplement to his article. Mr. Yuill is an Industrial Arts teacher and Department Chair, Tippecanoe Junior High School, Lafayette, Indiana.

One of the ways of helping the special-needs students in the Lafayette, Indiana, area was to use a team-teaching approach. In this method a special education teacher (Robert Mira), a home economics teacher (Madonna Bennett), and an industrial arts teacher (Ronald Yuill) were joined together. This approach has been used for three years at Tippecanoe Junior High of the Lafayette School System.

This program was designed for students who couldn't be mainstreamed into regular classes. In designing this class some of the reasons considered why students couldn't function in regular classes are as follows: (1) Students couldn't accomplish work assigned in regular classes even with additional help. (2) Class goals were too high for special-needs students to accomplish. (3) Special-needs students were not given sufficient time to accomplish tasks assigned. (4) Many special-needs students had poor social behavior which was not conducive to the educational process.

In solving item one, the special-needs teacher used his expertise in suggesting ways of helping students with different problems: (1) He checked the reading level of our class reading assignments, of which many are done in the special-ed rooms under their supervision. (2) He provided us with up-to-date publications and programs for special-needs students. (3) He recommended the use of more visual aids and the division of students into ability groups was a helpful suggestion. (4) He requested lab teachers' input for the writing of the student IEPs. They were written so that the student could accomplish the tasks assigned.

Special-needs teachers can help keep lab activities at a verbal and reading level which the students can master. We should all remember that special-needs students can learn, but it may take them longer. With this in mind, classroom activities should be short, simple, and to the point. For example, if we were studying a unit on wood fasteners, we would take one at a time—nails, screws, etc. More review is also needed for two reasons: (1) To make sure they have retained what you planned. (2) To help them retain the material longer.

Although both of the lab teachers had nine years of teaching special needs in various ways, the special-needs teacher was a great asset and strengthened the team. When lab activities were performed, the extra eyes of the home economics and special needs teacher were helpful in industrial arts. With this system we have had very few accidents in the industrial arts lab.

Goals for special-needs students should be realistic, attainable, and measurable. In many cases these students have had failure after failure. They must feel they can do something even if it is very simple. Being able to accomplish a task will give the student a better self-image and more pride in his/her work. Many small projects which are completed will do more good than one which is large. The large projects leave more room for failure. The class motto is "Oh, what a feeling coming to class not expecting to fail." We try to begin and end the period with something they can do.

Special-needs students require more time to start, work, and clean up. The Tippi program has a two-hour block for these students. The home economics, industrial arts, and special-needs teachers are all scheduled for the whole period together. The students may take the class for the whole year. They actually receive four times the amount of instruction as do the regular students.

Social behavior such as immature actions, name calling, fighting, talking without permission, *etc.*, cause many problems for the special-needs students. Many discipline problems arise in regular classes with special-needs students because they can't do the assigned tasks. In this Voc-Ed program students are given work they can accomplish. Examples: (1) Students who can measure and use layout tools are permitted to do so. Those who can't measure are given patterns to trace. Others may need help to trace the patterns. (2) Tests, written work, and textbook reading assignments are read to students who can't read. (3) In home economics, family meals are

prepared by ability groups. The slowest group of students makes peanut butter and jelly sandwiches, the middle group makes toasted cheese sandwiches, and the top group makes chili.

We use positive behavior modification to help our students with social behavior. The best method was developed by Bob Mira.

In this system the students are given five points per period. If they are good, they get to keep all of the points. They must give up points for being late to class, not going to a class prepared (*e.g.* no pencil), class disruption, not following instructions, and unsafe acts. The points are totaled in math class and converted into money, five points = 1¢. The students may receive cash or buy items with their money. The money is raised through class projects.

Every day after school the ninth-grade students sell stick candy at school to finance a class overnight trip in May of each year. The trip is planned by all students and those who have good behavior and whose parents consent are permitted to take the trip.

Poor social skills, such as being late and not getting along with others, cause many people to lose jobs, quit school, and be a failure in life. Role playing is used sometimes to show how to get along with others. Seeing ourselves as others see us sometimes is a great help. In the family unit we discuss sex-ed, dating, and home problems. Students sometimes tell about problems they are having at home, and all try to offer suggestions.

Each year we try to visit a fast food restaurant and to go to a fancy restaurant to eat. Table manners, ordering food, tips, and other problems are discussed prior to going. Our last comment to this is "You get only one chance to make a good first impression."

When selecting a project you should answer the following questions before giving it to your students:

1. Is it too difficult? Can they complete it?
2. Is there room for error and still have a good looking project:
3. Can the project be produced safely?
4. Will the student be proud of the completed project?
5. Will the project accomplish the goal for the unit?
6. Can this project be made simpler with fewer pieces? Fewer pieces cut down on the number of operations and thus permit a better project, *i.e.* less chance of mistakes.

Sometimes teachers and other students may need to do part of the work for the special-needs student. They realize they can't do everything and must have help sometimes. Project completion is a must with special-needs students. They must not be permitted to quit. Give them more help but don't let them quit; this will carry over in life and on the job.

Mass production projects are great for special-needs students because you can assign jobs according to their abilities. This type of production makes all students feel important because their job is needed as are all the others.

When we are in the industrial arts lab, the home economics and special education teachers help in areas assigned by the industrial arts teacher.

Home economics units are usually with only a part of the class at one time. One of the best units is the home survival unit. In this unit one student cooks for three others. Usually Madonna Bennett has only one helper with this project. No matter who helps, the teachers work along with the students.

With the two-hour block of time we have ample time for field trips. We study about different occupations in class and we can view them on location. In our leisure time unit we go bowling. The scoring and rules are studied in the special-needs classroom.

We play "Monopoly" to give students experience of working with money and getting along with other students. "Hollywood Squares" is a fun game to use for reviewing. This game is great because the teacher regulates the questions being asked; thus easier questions may be given to low-ability students. Students read game instructions in their reading class and play the games during the two-hour block of time.

Our students have planned parties, teas, small banquets, and luncheons. In most cases, after class discussions, the wild ideas fall aside and a good activity is planned and conducted.

Most of the funds for this program are made by the students. The sale of pizza at lunch is the best money raiser. Stick candy takes longer to collect the same amount of money. A Christmas boutique was great at first but it didn't receive much traffic last year. A small amount is collected through the book rental system.

Additional information on this program may be obtained from SCHOOL SHOP - "Life Skills Orientation for EMR Students" by Madonna Bennett and Ronald Yuill, November, 1978.

Supplement

WOOD

Projects Used

Toolbox (individual)
Birdhouse (individual)
Trivet (individual)
Cutting boards, sink cutouts and laminations (mass produced & individual)
Model house (group project)
Pinewood derby cars (individual)
Fasteners unit-sorting and teaching aid (individual)
CO^2-powered cars - McKnight Program (individual)
Frustration sticks (mass produced)
Aggravation games (mass produced)
Napkin rings (mass produced)
Indian mystery sticks (mass produced)

Possible Projects

Name signs with the router
Puzzles
Decoupage
Yo-Yo
Pencil holders
Jewelry box
Boomerang
Knife holder
Salt and pepper shakers
Toys
Towel hook
Key chains

Comments

We spend more time in this area due to the availability of classrooms.

Mass production projects are great for these students because of the following:

1. Jobs can be given according to the ability of the student and the difficulty of the task.
2. More supervision and inspection are needed for quality projects.
3. Go and no-go gauges work well with these students.
4. Measurements should be given in metric for fewer mistakes.
5. Attention spans should be taken into consideration when assigning jobs.
6. More cleanup time is needed for these students.
7. Social behavior also must be considered when assigning jobs.

Not all students are capable of using power tools. This should be determined early and stressed.

Latex finishes are best for EMR students due to the water cleanup. They are messier than regular students. The following areas are covered:

- Woods
- Plastics
- Electricity
- Graphic arts
- Power
- Metals
- Hobbies
- Recreations
- Jobs
- Drafting

Drafting was very hard for most of our EMR students. However, blueprint reading in the models unit, the sketches in the pinewood derby, and LSRAV cars were a success.

GRAPHIC ARTS

Projects Used

Silkscreen
1. Stencils cut by students were bad.
2. Stencils cut by teacher were better, but messy.

Letterpress - business cards and letters, Christmas cards and assembly of the school newspaper.

Possible Projects

Photo silkscreen
Photography
Offset printing
Ditto production for the school

Comments

The silkscreen area was fun, but very messy. Most of the students had problems making a good stencil. I think a photo process would be the answer in producing good stencils. Once good stencils were on the screens, most of the students got a good print.

Letterpress was a poor area for the slower students. They spilled type and spent most of their time recomposing. No problems were encountered once the type was set up in the press. A small job should be used with no smaller than 10 point type, but 14 point would be better. Also fancy type should not be used (wedding text).

Mother's Day cards were made using the thermography process with the letterpress. The students thought this was neat.

Gold leaf and rubber stamp making have the same problems as setting type. However, after the set up is made, our students will have few problems.

PLASTICS

Projects Used

Rotational casting - footballs and piggy banks
Injection molding - screwdrivers and bottle caps
Casting - napkin holders and plaques
Dip molding - coin purses and coating of tools
Internal carving - key rings
Vacuum forming - license plates
Mechanical thermoforming - flying Schultz (modified Frisbee)

Possible Projects

Night lights cast with polyester resin
Bowl casting with reinforced polyester resin

Comments

Our equipment in this area permitted us many different processes and basically all students produced the same projects.

We had problems working with liquids such as pouring, counting the drops of catalyst, and spilling.

Students using spray paint must be very closely supervised.

We used water extended polyester (WEP) as a resin for our casting. It is cheaper (one-third to one-half the cost of regular polyester resin) and its curing time is quicker (30 to 45 minutes).

ELECTRICAL

Projects Used

Circuit boards - series, parallel and combination of both
Soldering of wire
Home safety

Possible Projects

Lamps
Night lights (cast in "clear cast")
Simple radio circuits

Comments

I stressed safety all through this unit and related it to student homes whenever possible.

We used panels which contained buzzers, bells, lights, switches, transformers, and fuses to build basic circuits. Most students could do this if the schematic didn't have any crossed wires. The components had to be in the same position on paper as they were on the boards.

Other teachers and teacher aides found this unit boring, but most of the students liked it.

Simple radio circuits would be ideal and fun for these students.

POWER

Projects Used

Disassemble 4-cycle engine
Name parts and functions
Assemble parts

Possible Projects

Inspection of parts and work on own engines—possibly school mowers
Blade sharpening

Comments

This unit had the most excitement generated of all the areas.

A demonstration engine was disassembled, parts and functions named, and then reassembled.

The students were divided into groups and did the above.

A milkshake was given the student who could name the most parts and functions in each group. Jellybeans were given students who tried. This inspired them to try harder.

METAL

Projects Used

Kozy Creations - trivets (mass produced)
Pen holders - foundry unit team project
Belt buckles (Tim Schultz)
Welding

Possible Projects

Chisels (forging)
Sheetmetal boxes (individual)
Nail people (Charles Alm)
Bracelets

Comments

Kozy creations projects were very successful for us and were inexpensive. Leather gloves should be used when bending the scrolls to prevent the students from cutting their fingers. We used no welding rod on this project but melted the scrolls to join them together.

Pen holders were made from styrofoam balls cast with aluminum.

We used a zinc etching of the school logo for a pattern for a belt buckle.

Our biggest problems in this area were cut fingers and availability of the metals room.

HOBBIES, RECREATION, AND JOBS

Projects Used

- Bowling
- Basketball
- Model building
- A day at the park
- Hotel management and upkeep - "McKnight Hospitality and Food Services"
- Carpet cleaning and repair
- Going out to eat
- Parties
- Applying for jobs
- "World of Work" by McKnight

Possible Projects

- "Project Discovery"

Comments

Many of our students have social problems, and these projects helped in this area.

We try to have carry-over with other classes. In bowling, the students read about bowling and talked about how it is done, scored, and its rules. We then went bowling. The score sheets were used in math to total points and figure handicaps.

Models were used to help students read blueprints. The slower students were given snap together models.

In the jobs area the students studied different jobs in the special ed classes. Whenever possible students filled out applications and applied for jobs during the mass production units.

The McKnight program, "Hospitality and Food Services," has a good unit on hotels. We also used the "World of Work" by McKnight.

3. MEETING SPECIAL NEEDS THROUGH VOCATIONAL TRAINING

by Dan Moriarty

The SERVE Center concept has been successful in Minnesota. Dan Moriarty cites that one of the reasons is the open philosophy of the staff—that students with handicaps can be successful within the Vocational Technical System. Many of the Vocational Technical Institutes are postsecondary in nature. Vocational Technical Institute 916, located in White Bear Lake, Minnesota, draws both students and support from 15 neighboring school districts. Dan Moriarty is Assistant Executive Director of the Minnesota Education Association. (Special thanks to Dennis Lesher and Pat Berres, two seven-year veterans of the SERVE Center, for their cooperation in writing this chapter.)

Is all the time, money, and effort poured into the Education Program for the Handicapped worth it? That's a question lots of legislators and taxpayers are asking these days.

When that question is asked of the alumni of such programs, the answers are generally a resounding Yes! Particularly if the alumni come from 916 Vo-Tech Institute in White Bear Lake, Minnesota.

Take a case in point, a student named Bob, 24 years old, an educable mentally retarded person who, when he enrolled at 916, was unable to read application forms, newspapers, written instructions, and occupational manuals.

Would you believe that after training he's now on the job, earning $13,728 annually, and paying taxes of $2,542 federal and $843 state?

That's just one of hundreds of examples of successes experienced by handicapped students who were assisted by the 916 Vo-Tech SERVE Center. SERVE stands for Special Education Rehabilitation Vocational Education.

What makes the SERVE system so successful? Many answers were provided by evaluators, job seeking specialists, and other vocational instructors. They work as a team, beginning with the startup "Assessment Process" and continuing through the "Job Seeking Skills" in the exit phase.

But there's something else. There's an atmosphere that prevails through the entire 916 system, starting with the school board and flowing through the superintendent and staff. The philosophy they live by is simple: 20 percent of every vocational class must have handicapped students enrolled, and all personnel must have a positive attitude toward educating students who are handicapped. These factors are essential. Without them, success would be by chance, not by design.

How does the system work? Let's follow a student through the program to see what happens.

Bill is 39 years old, multiply handicapped—deaf and cerebral palsy. After graduating from the Minnesota School for the Deaf twenty years ago, Bill worked on a farm for eight years, then moved to Minneapolis where he endured a year as a bar "swamper." Next, he obtained a job as a part-time kitchen worker in a Minneapolis nursing home, staying there for eight years. Finally, he was referred to 916 Vo-Tech by the Minnesota Division of Vocational Rehabilitation. That's when Bill became a client of the SERVE Center.

Although Bill didn't know it, he began experiencing what SERVE was all about: "It is the philosophy of the SERVE staff that students with various handicapping conditions can succeed within the 916 Area Technical Institute, whether the handicap is physical, intellectual, social or emotional. Most of the students can be trained and will find gainful employment." That's what the staff began to make happen.

The startup phase of Bill's program was, perhaps, the most significant step. Evaluators took lots of time and used lots of skill to do two things: (1) overcome the "bad news" that had happened to Bill up to this point in his life, and (2) help him confirm his interest in a particular program where he could realistically believe in success.

To do that, the staff worked from a positive expectancy, looking for Bill's strengths to build on, yet noting behavior changes needed to aid his success—such as improvement in his language or attendance. Over a period of six weeks, the assessment process slowly assisted Bill to decide on an appropriate vocational program. Vocational skills, limitations, and potential for training were evaluated using interest tests, achievement tests, aptitude batteries, dexterity tests, work samples,

and training samples.

A partial listing of the psychometric testing available to all students includes the following:

Interest Tests: Career Assessment Inventory, Minnesota Importance Questionnaire, Minnesota Vocational Interest Inventory, Kuder Preference Survey, and Strong Vocational Interest Blanks

Achievement Tests: Gates MacGinite Reading (forms A, D, 3) and Wide Range Achievement Tests

Dexterity Tests: Crawford Small Parts Dexterity, Purdue Pegboard Dexterity, Bennett Hand Tool Dexterity, and Stromberg Dexterity

Aptitude Tests: General Aptitude Test Battery (G.A.T.B.), Differential Aptitude Test (D.A.T.), Graves Design Judgment, Bennett Mechanical Comprehension, Revised Minnesota Paper Form Board, Macquarie Test for Mechanical Aptitude, S.R.A. Short Tests of Clerical Ability.

In addition to some of those tests, Bill was also put through a series of Work Sample and Training Sample tests. These were mockups or facsimiles of an actual job being performed in the world of work. When Bill demonstrated he could adequately perform on a realistic facsimile of a specific job, his chances for success in that occupation were observed and recorded by the evaluators.

In training sample testing, Bill was given standardized instructions on how to complete various tasks. Instructions from actual program training materials were given in various forms: oral, written, demonstration, audiovisual, or in combinations.

During the testing, behavior observations were also made, checking punctuality, attendance, frustration tolerance, complaints or fatigue, and need for excessive supervision. Work pace, dexterity, hand-eye coordination, strength, and ability to follow oral, written, and audiovisual instructions were likewise observed.

Then came the tryout phase in a Building Cleaning and Care Program. Here Bill experimented in different areas of interest, testing the experience while the staff observed him in action. This activity culminated in a staff meeting involving Bill, a Work Experience Coordinator, and the 916 staff members involved.[1] The objective of the meeting was to assist Bill in formulating a realistic career plan. Recommendations for Supplemental Resource Instruction (SRI) were at the same time considered: remedial math, remedial reading, and other necessary services needed to insure Bill's success.

The product of this meeting was an Assessment Analysis, a formal written report which included the complete assessment data, and the conclusions of the staff. This document then served, in a sense, as Bill's IEP, his Individual Educational Plan. Bill was finally ready to enroll in a Building Cleaning and Care Program at 916.

At this point, the training phase, two important new people entered the picture: the regular vocational instructor and the supplemental resource instructors who made the mainstreaming program work by monitoring Bill's progress closely. As SRI noted difficulties, they assisted Bill with his special educational needs. And he had a few of those.

His limited reading ability (a residual effect of deafness) necessitated instructional materials which emphasized a learner-style preference other than reading. The Building Cleaning and Care program used a bookless format, developed specifically to meet the needs of reading handicapped students. Video-taped presentations were used extensively in the program to accommodate Bill's disability.

In addition, his basic program was supplemented by an interpreter whenever needed. That service was fundamental to assuring his success, since two months of special reading instruction produced no gain. That instruction had been attempted via a computer-assisted program but was not successful in improving Bill's vocational potential. So it was abandoned in favor of an interpreter.

While Bill was working on his vocational program, other SERVE students were busy in other parts of the vast 916 complex. Fifty-seven vocational programs are available to special-needs students in the institute. The average length of time for all of these programs is one year, with the range running from four months to two years. It's possible, of course, for students in the individualized self-paced programs to use slightly more or less time.

Still other students were in a different program being classified as "limited objective" students. Tests showed they were only able to complete a certain number of training tasks. In the Service Station program, for instance, some students were only able to change tires and do exhaust system work, not having the academic skills to learn a car tuneup.

Then four months before Bill's graduation, the Job Seeking Skills Instruction phase began. This instruction involved meeting with Bill for 30 minutes a day, preparing him for the next big step: actually getting a job.

Here, Bill learned about his rights to employment provided for under the Rehabilitation Act of 1973 (Sections 503-504). That phase was followed by instruction in writing a resume, filling out job applications, and practicing interviews with potential employers.

For some students this phase of training can be extremely difficult. It may take, for example, three weeks for a student to type a resume, but when they finish, they

[1]In the case of secondary students, parents are involved as well as high school counselors when appropriate.

know "they did it!" And that's the key: the student must do it. This was particularly tough for Bill, but he made it. He knew he had to —not to just get that first job, but to get the second if he should lose the first. People who are handicapped know they have two big hurdles to overcome: getting a job and staying on the job.

Bill also had trouble with the interviewing phase, where video tapes were made of his performance. After viewing the first tape, he remarked, "Gee, I didn't realize I looked that way to an employer. I better watch my eye contact. I guess I was kinda scared . . . but it was worth it. I've always been afraid of a job interview . . . maybe that's why I never tried for another job."

Then came the big moment, when Bill actually got out of his car and walked into the employer's office for an interview. He was "thinking positive," remembering that it usually takes four or five interviews and that every interview should be considered a learning experience.

For Bill, success didn't come until the third try, but when it did, it was sheer delight! First, he felt relieved, then he was overjoyed . . . his dream had come true, at least. He was a custodian in a St. Paul nursing home.

But 916's assistance didn't stop there. A followup contact was needed to assist the employer and Bill in the transition from school to work. This service included an interpreter to aid the nursing home supervisor in presenting the basic instructions of the job. Subsequent monitoring on the job also took place to assure satisfaction on everyone's part. Contact was made to check on successful adjustment to job duties, the work setting, and to coworkers and supervisory staff. Sometimes this phase requires the Job Seeking Instructor to help a student get a new start after losing the first job. That may mean driving to potential new employers and watching the student get out once more to pick up a job application blank.

This whole process isn't easy—particularly for someone who is handicapped—but there's a big payoff for students like Bill, the SERVE Center staff, and the regular vocational instructors, who see that even severely handicapped students can be employed if properly trained. The payoff comes when the student gets that first paycheck. That's when they know they've "hit"—they've put it all together from assessment to employment. Right now, the SERVE Center success rate is running at 85 percent, which is very close to the success ratio for the regular walk-in students at 916.

How does Bill's employer feel about his work? His supervisor said, "I wish our entire staff were as productive as he is. He's a guy who gives 110 percent to his job."

What about Bill? His life has changed. He now has fringe benefits which he didn't have before as a part-time worker. He has hospitalization insurance, although he hasn't missed a day in 19 months. He's also taken a vacation, a trip to the Holy Land last fall. And since his income has doubled, he was able to purchase a new car, using an interpreter to help negotiate the contract.

Finally, how do the "regular" students feel about having students who are handicapped in the vocational training programs? They feel good about the experience. Very positive. One commented: "They have as much right to be here as anyone else." Others said it gave them a chance to grow in understanding, about themselves and their classmates who were handicapped. They learned that they were more alike than not alike, that their interests and needs were more often the same than not.

Was all the time, money, and effort spent on this special needs program worth it? What do you think?

4. A LEARNING MANAGER— A PARTIAL SOLUTION

by Gerald A. Vanim

One of the ways to assist handicapped students is by providing their teachers with backup support and information through the use of a "learning manager." Such a program was initiated in Delaware County, with services to three Area Vocational Technical Schools. What follows is a description of this program, some specific information, and reasons for making certain decisions. Also included is information about the voluntary in-service meetings planned for the teaching staff. Supplement 2 includes comments from the "learning manager." The author is Coordinator of Vocational Guidance Services, Delaware County Area Vocational Technical Schools, Pennsylvania.

Vocational educators have long worked with special-needs students who have been mainstreamed into their classrooms. The primary difference today is that an ever-growing number of handicapped students are applying for enrollment in vocational skills training programs.

In our county, over a three-year-period, our total enrollment has remained constant, while the percentage of students identified as handicapped has greatly increased. Two years ago 172 of our 3,100 students (5.5 percent) were identified according to federal guidelines as handicapped. Last year the handicapped enrollment was 249 students (8 percent), and this year 343 of our students (11 percent) were identified as handicapped. While our enrollment reflects all of the defined handicapped conditions, the largest percentage of our students is identified as having specific learning disabilities.

With the advent of P.L. 94-142 the concerns of our county teachers were like those of vocational educators everywhere: concern for student safety in the shop, apprehensiveness about working with handicapped students without specific training or administrative strategy, and fear of having to lower class standards to accommodate special-needs students. This last factor is particularly significant when you reflect upon the primary objective of our technical and trade programs to prepare students with job-entry level skills.

Vocational instructors are rightfully proud of their students' successes in the labor market. This is, however, why vocational and practical arts educators are concerned over efforts to mainstream special-needs students. Will they be able to maintain the high standards prospective employers have come to expect of their graduates and at the same time succeed in meeting the needs of their handicapped students?

One of our teachers articulated his feelings when he said, "I left industry and entered education so that I could help young men become machinists, but now I find I first have to help boys become young men."

Documentation of failures, dropouts, and nonreturning students showed that students with handicaps needed additional services in both instructional and supportive areas in order to be successful. If these services are not provided, special-needs students tend to become failures in the mainstreaming concept.

So that we could attempt to address some of these concerns, a project was written for state allocated handicapped funds with which we were able to provide a "Learning Manager for Vocational Skills Training of the Handicapped."

The dual purpose of this project was (1) to provide handicapped students with supportive instructional services from the time interest in vocational education was first indicated, throughout enrollment, and continuing until students had completed their skills-training program and were placed in a full-time employment; and (2) to provide the teaching staff with supportive services, including in-service workshops and assistance in providing individualized instructional programs.

We were fortunate in being able to staff the position of Learning Manager with someone who had extensive education and experience in working with handicapped students. She had previously been employed as a counselor on the Special Education Team of one of our local high schools. There she had the responsibility of counseling the learning disabled as well as the socially and emotionally maladjusted students.

The first task of the Learning Manager was to assist our teachers in the identification of those handicapped

students who were being mainstreamed into regular vocational programs.

Initially some of our sending schools sought to protect the anonymity of their handicapped students fearing that once identified, that student would be "labeled," thus reducing the chances for assimilation and success.

It was our belief that it is essential for the classroom teacher to know, or determine, the limitations of each student as well as evaluating the strengths that each student brings to a program. It was also part of our philosophy that the child has to be seen as a totality and everyone concerned—parents, home school personnel, and classroom instructor—must communicate and approach the student from the same perspective. The articulation provided by the Learning Manager has brought us much closer to this goal.

By providing our teachers with information from the student's home school IEP, vocational interest, aptitude, and skills test results, we have been able to modify instructional programs so that they were more relevant for our students by developing individualized programs matching special needs and abilities with appropriate vocational skills training.

One of the measurable outcomes of this effort has been a greater student retention rate. Over 85 percent of our enrolled handicapped students were pre-enrolled to continue their vocational training, in an effort to achieve an even higher level of competency. This compares favorably with an overall student retention rate of 83 percent.

Because of our charge, to prepare students with job-entry-level skills, special attention was given to placement efforts.

The handicapped students who were graduating seniors were instructed on how to find and keep a job, life-survival skills, and interpersonal skills. Capstone, cooperative work experience was provided for students who had completed minimum competencies and were able to meet entry-level job requirements. While 48 percent of our handicapped seniors participated in a co-op experience, this fell well short of our 90 percent goal and will require greater efforts.

Placement, however, is an ongoing job and over 90 percent of our handicapped students have been employed in full-time positions following graduation. Over 60 percent of these special-needs students are employed in their trained fields. This figure is well above our state average for regular students.

In-service workshops were also designed to address some of the concerns expressed by our instructional staff. The workshop activities have focused on definitions and identification of handicapped students, employment opportunities, appropriate shop settings, and teaching techniques for special-needs students. Additional in-service activities are planned for developing and sharing of specific strategies for working with the handicapped student. While teacher attendance at these workshops has been voluntary, 45 percent of our staff have now attended one or more of the three sessions, and the number of professional staff attending each session has continuously increased.

In our experience, we have found that no one style of teaching is most effective. Our successful teachers of special-needs students have used a wide variety of methods of teaching styles. Their success has little to do with methodologies. It is, instead, teachers who combine their job-oriented skills with the basic human qualities of perception and sensitivity who are helping our handicapped youth make the adjustment to the vocational classroom.

In the spring, as we pre-enroll students for the fall term, our Learning Manager will be working in our sending schools. There she will assist counselors and students, assess skills, plan student placements, and gather information on new special-needs students that can be translated by our instructors into additional appropriate vocational skills training experiences.

Locally, we rate our Learning Manager project an unqualified success, but the needs of the handicapped student in a vocational setting cannot be met by a single person. By assisting the regular vocational skills instructors in understanding and meeting the unique needs of handicapped students and in planning effectively for them in the classroom, we have broadened our base of expertise, increased teacher confidence, and gained sympathetic supporters for the mainstreaming concept.

One of our teachers in discussing the five special-needs students in his afternoon shop said, "Each day brings new problems, new challenges, but that's why I came into education."

This year, two of our sending school districts have added special-needs liaison persons to their staffs. In addition to working with vo-tech students, they are actively involved in the mainstreaming within the confines of their own schools, providing supportive services for students and teachers. This approach, while not a new one, and certainly not a panacea for all the problems of mainstreaming special-needs students, is proving to be another valuable aid in education's quest of helping each child reach his/her full potential.

Supplement 1

IN-SERVICE AGENDA I

I. Introduction
II. Agenda Review
III. Education - A Learning Experience for All
IV. Who is the Special-Needs Student?
    a. Definitions
    b. Individual student differences
    c. Special Ed./Vocational Ed.

** LUNCH **

V. "Learning by Doing"
VI. Factors which influence learning
VII. The Learning Disabled Student
    a. Definition
    b. Behavioral characteristics
    c. Teaching approach using vocational-technical shop materials
VIII. Workshop Evaluation
    Adjournment

Additional half-day workshops following the afternoon format will be used to discuss the emotionally disturbed student and the educable mentally retarded student. The sharing of successful techniques will be emphasized.

IN-SERVICE AGENDA II

I. Introduction
    Coffee and Danish
II. Film - "A Different Approach" - for hiring the handicapped
III. "Vo-Tech Placement for Special-Needs Students - A Home School Viewpoint." Presented by the Supervisor of Pupil Personnel Services.
IV. "Meeting Students' Vocational Needs." Presented by the home school district Resource Room Coordinator.
V. "Instructional Strategies"
VI. Workshop Evaluation

** LUNCH **

Involvement of home school personnel and special educators in the planning and presentation of workshops is recommended.

IN-SERVICE AGENDA III

I. Introduction
II. Learning style - A Quick Test
III. Determining Informal Reading Levels - Fry's readability.
IV. Instructional Adaptations for Individualization
V. Adaptive Strategies for Modifying Materials
VI. Workshop Evaluation

** LUNCH **

Don't underemphasize an on-site luncheon. It allows workshop participants to continue to explore strategies with their colleagues—an opportunity the teaching day seldom provides.

Delaware County Area Vocational-Technical Schools
Special Needs

New Student Profile Sheet

Name _____ Date of Enrollment _____ Date of Profile _____

Teacher _____ School _____ Course _____ Level _____

The rating of a student is necessary to identify strengths and weaknesses in order to match teaching approach.
Below rate the student's behavior by circling appropriate number.

	Never	Almost Never	Some-times	Average	More Than Average	Almost Always	Always
1. Moves easily through shop without bumping into machinery and equipment.	3	2	1	X	1	2	3
2. Comprehends directions.	3	2	1	X	1	2	3
3. Organizes self to deal with assignment to finish in normal time expectancy.	3	2	1	X	1	2	3
4. Good attention span and concentration span.	3	2	1	X	1	2	3
5. Knows right from left, up from down, forward from backward, directional orientation.	3	2	1	X	1	2	3
6. Prompt in attending class.	3	2	1	X	1	2	3
7. Remembers and recalls information in correct order.	3	2	1	X	1	2	3
8. Writes legibly.	3	2	1	X	1	2	3
9. Draws three dimensional shapes.	3	2	1	X	1	2	3
10. Uses basic vocabulary.	3	2	1	X	1	2	3
11. Speaks without hesitation, stuttering, and uses adequate sentence structure.	3	2	1	X	1	2	3
12. Pronounces words with correct beginning, middle, and ending sound.	3	2	1	X	1	2	3
13. Writes simple sentences and communicates ideas in writing.	3	2	1	X	1	2	3
14. Spells in written and oral form.	3	2	1	X	1	2	3
15. Adds, subtracts, multiplies, and divides.	3	2	1	X	1	2	3
16. Applies basic arithmetic processes to new situations.	3	2	1	X	1	2	3
17. Sees relationships between quantities—fractions and decimals.	3	2	1	X	1	2	3
18. Gets along with peers.	3	2	1	X	1	2	3
19. Sees logical outcome of their behavior.	3	2	1	X	1	2	3
20. Assumes responsibility.	3	2	1	X	1	2	3

Supplement 2

From "A PARTIAL SOLUTION"

As the Delaware County Learning Manager for Vocational Skills Training of the Handicapped for the past two years, I have been in a unique position to observe teachers working with handicapped students who have been mainstreamed into regular vocational classes. There seems to be an eagerness on the part of the vo-tech teachers to look for alternatives in providing a more productive program for their students. I'd like to believe that my being supportive of the teachers' efforts to try new approaches and new materials has helped them become more secure and comfortable in their instruction of special-needs students.

When encountering a student with learning difficulties, the faculty doesn't automatically jump to the conclusion that the student doesn't care or doesn't want to learn. Some perceptive teachers have even developed a sensitivity to students who may have learning problems that have not been made known to us. The checklist developed for use by teachers was often helpful (Supplement 1). Most of the time the teacher was found to be right on target and gave me the clue I needed to ask the right questions at the home school.

There has been much self-evaluation by teachers of their methods, teaching materials, and tests. Reduction of visual distractions, greater use of appropriate vocabulary, and restructuring of teaching stations, while designed with special-needs students in mind, have benefited all students. Teachers have come to realize that special-needs students often require more time to acquire and retain skills. This has resulted in a willingness to individualize student evaluation on how much they have learned and not solely on what has been covered.

Our vo-tech teachers have also shown considerable creativity in the development of single-skill minicourses. After soliciting a promise of employment from a local auto repair shop, an EMR student was trained to change tires in one of our auto mechanics shops. Following several weeks on the job, the employer requested that the student be instructed in inspecting brake shoes to set standards and procedures for installing new brakes. Later in the year, the student again returned to the vo-tech shop to learn front-end alignment. With the cooperation of the vo-tech instructor, we were able to provide a satisfied employer with a more versatile worker, the community with a self-supporting, tax-contributing, justifiably proud citizen.

Communications between home school personnel and vo-tech teachers have been enhanced as school districts have recognized the need to develop closer liaisons with vo-tech schools. Itinerant resource-room teachers with visitations to their students' vo-tech classrooms and job sites have further promoted relationships.

School districts have also taken advantage of our hands-on work experience evaluation labs to get additional information prior to vo-tech placement of special-needs students. In my position, I've also been available to help districts make decisions on student course assignments. This also provides me with additional information I can relay to our teachers earlier in fall that will better enable us to provide for our individual students.

Karen S. Brubaker
Learning Manager for Vocational Skills Training of the Handicapped
Delaware County Area Vocational-Technical Schools

5. SPECIAL CARPENTRY CLASS FOR HANDICAPPED STUDENTS

by Margaret Malsam

Mainstreaming isn't the only answer to providing successful vocational experiences for handicapped students. A special carpentry class in Northglenn, Colorado, again demonstrates the necessity for a "caring" teacher. The author is a Public Relations Specialist for School District Number 12, Adams County, Colorado.

Being accepted as someone who is not different is perhaps one of the greatest needs of handicapped students. With this in mind, Dwight Mackley has designed a special carpentry class at the District No. 12 Voc-Tech Center for these students. "We get them out of isolation and into a normal situation where they learn to work with each other," he said.

Students who may not be able to read or do much math are taught basic woodworking skills, such as reading a tape measure and using hand tools and some power tools. They construct an actual product, such as a doghouse or tool shed, which is then sold for the cost of materials plus 10 percent for tool maintenance.

"This gives them some industrial experience," points out Mackley. He added that he is trying to prepare them for the world of work by being firm with them. "I don't pamper them because they won't receive it in the real world," he said. "I expect results."

He makes special allowances for their individual handicaps, however, and often conducts tests orally, giving them either a "pass" or "fail" for the course. The intelligence quotient (IQ) of the students is lower than average. "Some also have problems of physical coordination, deafness, or psychological disorders," he said. Mackley receives a personal briefing and history of each student from counselors and teachers at the beginning of the semester. He noted that these students' general attendance usually improves after taking the carpentry course. "They learn how to become more responsible through this class," he stated.

The first nine weeks of the semester he spends on teaching them hand tools and safety. During this time, they build a footstool. After teaching them on a one-to-one individualized basis, Mackley gives them post-tests to see if they have mastered the basic skills. He attempts to have them learn 12 competencies or tasks (see attached list), such as identifying common building materials, learning basics of floor and wall framing, computing board feet of lumber, and figuring cost of building materials.

Mackley has about 11 students (never more than a dozen) each semester for a two-hour period each day. He uses the "hands-on" approach, teaching theory as they work on projects each day. He emphasizes safety and students must ask his permission before using the table or band saws, which are the most dangerous tools. The students also spend one hour a day in a vocational tutoring program. "The tutor helps them with special work which reinforces the training they are receiving here," he said. Many of the students also participate in the Work Experience and Study program at their high school. Through this special vocational program for handicapped students, the students combine academic learning with work experiences in the community which are designed to meet their individual needs. One-half of their wages is paid by the State Vocational Rehabilitation Department.

Mackley said he got the idea for his carpentry course when he was in a work-study program for handicapped students at Laradon Hall. He added that he personally has known the feeling of helplessness when he had a serious illness. "I know what it takes to fight and get back." Mackley also has had professional experience in the construction industry.

In the future, Mackley wants to organize a production line for the lower half of this class to make a product such as a picnic table. Then he would like to try and market the class products through the high school Distributive Education Clubs of America (DECA) students. He feels that these handicapped students could learn to become self-sufficient later by working at a repetitive task in an industrial assembly line. At present the class has made doghouses which sell for $45, and they are working on a tool shed which will sell for about $500.

Mackley plans to mainstream a few of the most capable seniors by letting them work on the District No. 12 house building project with other district vocational students. "My objective is to teach them basic and social skills, so they will be able to fit into a regular job situation," said Mackley.

Vocational Carpentry

Competency and Task Listings

Competency One: General Safety
1. Identify general safety rules for carpenters.

Competency Two: Tape Measure
1. Identify markings to 1/8" graduations on a steel tape.

Competency Three: Board Feet
1. Compute board feet of lumber. Compute cost for building material.

Competency Four: Hand Tools and Safety
1. Identify hand tools.
2. Demonstrate safe and proper use of hand tools.

Competency Five: Power Machines and Equipment
1. Identify common power tools used in carpentry, their uses, and safety rules.
2. Demonstrate safe and proper use of power tools and equipment.

Competency Six: Materials
1. Identify the common materials used in the carpentry trade, and how they are sold.

Competency Seven: Floor Framing
1. Identify the members necessary for framing a floor.

Competency Eight: Wall Framing
1. Identify the members of a wall.

Competency Nine: Insulation
1. Identify insulation used in house construction.

Competency Ten: Roof Construction
1. Identify parts of the roof (gable).

Competency Eleven: Interior Wall
1. Process of installing dry wall.

Competency Twelve: Exterior Trim and Siding
1. Procedure for applying lap siding.
2. Procedure for installing exterior door and windows.

6. THE VOCATIONAL PROGRAM FOR THE HANDICAPPED STUDENT

by Wayne Dorr

This chapter suggests a prevocational skills assessment program, whose results then assist in planning individualized programs for students. The author suggests that it is necessary to know about your student, your community, and your school's capabilities before you plan programs for the students. The case histories presented here demonstrate again what can be done for students with the right combination of programs. The author is Director of Special Education, Augusta, Maine, Vocational Center.

Introduction

The landmark court decisions of the early seventies (PARC, 1971; Mills, 1972), and the subsequent federal legislation of the mid-seventies (Vocational Rehabilitation Act of 1973; Education for All Handicapped Children Act of 1974) have ushered in a virtual revolution in the field of vocational education for handicapped students. The responsibilities generated by this emergent concept fall not just on special education staff, but, perhaps more importantly, on vocational education teachers and administrators as well. In concert these staff can develop the most significant component of education for handicapped high school students, vocational preparation. This chapter will focus on program strategies and procedures which will provide direction and, hopefully, encouragement to systems which do not have large sophisticated operations but do have a strong commitment to quality training and job placement for their handicapped students.

It is important for readers to understand from the outset that the concept of vocational training which emphasizes sheltered workshops, pushing brooms, and washing car windows is an anachronism. Further, that vocational education for handicapped students is limited more by our misconceptions than the students' disabilities. Once these two problems are brought to light as obstacles, then a new expectation system will develop and staff can move on to exciting, new training ideas. The reader should also be aware that the handicapping conditions being addressed here are not limited to mental retardation or physical disabilities. Nor are they limited to mildly retarded educable students or the minimally physically impaired, but include students who are moderately involved (once termed trainable mentally retarded) or have more serious physical impairment.

Pretraining Evaluation

Prior to individual or group program development it is necessary to establish a few facts about your students. Without having an appreciation for their interests, you cannot respond personally; without knowing their handicaps, you cannot respond diagnostically; without knowledge of their abilities, you cannnot respond prescriptively; and without understanding of your community, you cannot respond occupationally.

It is technically critical that a certain type and amount of information be retrieved and utilized when preparing for the vocational future of your students. As a matter of fact, one needs to realize that essentially three types of information are necessary for this endeavor. The first is about the student, the second is about your community, and the third is about your school's capabilities. Each is discussed below. There are numerous tests which provide similar information. It is not this writer's purpose to endorse specific instruments but to exemplify the kind of information that staff need to gather in order to implement a competent evaluation program. Those listed below just happen to be the instruments selected in several successful programs with which this writer is familiar.

I. Student Assessment

1. Prevocational Skills Inventory

In order to determine the student's understanding of job-related skills and subsequently develop an appropriate prevocational program, a solid assessment of such skills is vital. An efficient instrument, which is easily scored and leads to a determination of areas needing work, is the *Social and Prevocational Information Battery* from CTB/McGraw-

Hill. This inventory assesses not only job-related concerns but also home and personal life-related matters. How this data is used will be discussed further on.

2. Diagnostic Personal Interactions Assessment
We are told repeatedly that the major problems leading to the handicapped person's release from a job relate not to deficient vocational skills, but rather to deficient interpersonal relationship skills. An analysis of the student's ability to manage job stress, get along with co-workers, relate to supervision, and make responsible decisions under pressure certainly affords teachers the opportunity to focus instruction on this most vital area. One tool which has been useful in this effort has been the *Forer Vocational Survey* from Western Psychological Services. This test pinpoints problems in the areas of supervision relations, stress, and the ability to get along.

3. Mechanical Abilities Assessment
It would make little sense to attempt training a student in an area for which he or she has little mechanical ability. It is, therefore, necessary to conduct an evaluation of each student's aptitudes in the areas of eye-hand coordination, finger-hand speed, visualizing and adapting to spatial relationships, and other such patterns of ability. One instrument frequently used for this purpose is the *MacQuarrie Test for Mechanical Ability* published by CTB/McGraw-Hill. Testing of this type can save considerable time when developing a student's program and where occupational appropriateness is a priority concern.

4. Academic Achievement Testing
Any program planning must address the student's present academic achievement in the basic skills of reading, spelling, and math. A comprehensive, or sophisticated, battery probably has little real value in relationship to the amount of time involved, in administration, or in its use, and therefore an instrument such as the *Wide Range Achievement Test (WRAT)* accommodates very nicely. It provides useful information but does not require large amounts of time to administer and score.

5. Fine and Gross Motor Coordination Evaluation
In determining student limitations or physical disabilities affectng performance, it is necessary to conduct an evaluation of fine and gross motor skills. This, like other evaluations, has considerable value as it relates to the saving of time in appropriate programming, and in making necessary adjustments in training conditions or settings. Without such data one could easily establish a training unit only to discover later that an unknown motor disability obstructs continuation. This lesson has been dearly, and sadly, learned in more than one instance. Such testing, incidentally, might involve washer assembly, attaching nuts and bolts, sorting buttons, placing pegs in holes, *etc.*—all designed to provide information on manual dexterity.

6. Vocational Interest Inventory
Perhaps the most significant personal component of a vocational evaluation is that of assessing the student's interests. It may sound obvious in its error, but in all too many cases, when staff or parents decided what vocation the student would pursue, the result was disastrous. Concern, skill quality, job performance, personal pride, all are often set aside by the student who cares little for the vocation in which he or she is placed as the result of someone else's decision. The *Geist Picture Inventory* from Western Psychological Services is particularly useful for the student who is a virtual nonreader. Other instruments which gather interest information are of equal value. What is important is determining from the students their personal interests, and then developing a training which reflects those interests.

This writer readily admits that the above information is very limited; however, the only purpose here is to provide a general idea of minimal evaluation needed from which to develop training and subsequent placements. However, given that the space for this chapter is limited, emphasis will be placed more on implementation of program than evaluation.

II. Community Assessment. Prior to establishing job stations in the school, the staff involved in training must survey the community to determine resources available. Job surveying and job task analysis are time consuming, often complex, and vitally important to the success of your program. The staff person responsible for conducting the survey should pre-establish the procedural steps required to complete the study and utilize a standard format for data collection. For example, developing a list of basic questions to ask each employer will provide information useful in actual job training at the school site: What types of tools are used on this job? What rules of safety need to be taught?, *etc.* The more that can be learned about the job, the more readily it can be replicated in the classroom. Not infrequently, people do not realize the vast number of jobs in a community which

can be analyzed into individual tasks and recreated in the school. And, when working with students who have a slow rate of learning, it is a must that they are taught in small units involving only the number of tasks which can be managed at one time. It should also be noted that a consistent error made by staff is making assumptions about what tasks a student can already perform before the training begins. For example, a student may know nothing about how to use even the simplest tools. If the teacher does not take the time to determine whether the student has prerequisite skills, a good deal of time may be wasted in training which is at a higher level than present abilities.

Another necessary phase of community assessment is to survey the need for trained people in the areas which will be replicated in school. Obviously, there is little sense in training to do something for which there is no local or regional market. Asking employers how many tire changers, dishwashers, maintenance staff, *etc.*, that they hire in a year, and a check with the local or regional employment commission or labor department office can greatly assist in setting priorities each year.

III. School Training Facilities. The training capabilities of a vocational setting have in recent years exploded the potential of vocations for handicapped persons. We are beginning to stretch our imaginations about what might be done and are changing attitudes everywhere in regards to employing seriously handicapped persons into areas never considered just a few years ago.

Once job and task analysis has been completed in the community, the teacher may return to the classroom to replicate the job setting. The following examples are drawn from the program of Claire Pelletier in Augusta, Maine, which has consistently trained and placed, with excellent results, youths having varying degrees and types of handicapping conditions. The program, a special education training and support component, located in a regional vocational center, utilizes three areas for training—the special education resource room, the vocational training class, and community businesses.

Student "A" is 19 years of age, confined to a wheelchair, and functions in mild disability range in classroom.

This student has completed training in a particular phase of data processing and is now employed in a computer center for a public utility. Her training started in the resource room with appropriate interview skills, discussions covering work habits, conversational skills practice, and work-related math. From there she continued training in the data processing class in the vocational center and was later placed for two weeks of practicum at the computer center. During two years of programming she completed driver education with specialized equipment for the vehicle, worked at the state education department for a summer as a clerk-typist, and volunteered to work as a part-time aide in a classroom for moderately handicapped 12 to 16-year-old students. She has recently acquired the position at the computer center and subsequently purchased a van specially adapted with hand controls and a lift. The opportunities provided for this student completely changed her own feelings of worth and potential which, prior to entrance in vocational training, had been very poor. Her story is exemplary of what can be done with a little imagination and persistence on the part of staff. One last note: this year during the winter she asked if someone could build skiis for her wheelchair. Through the efforts of the program director, the resource teacher, and both the mechanical drafting and machine tooling programs, removable skiis were designed, built, and secured to the wheelchair. Next year she intends to take lessons.

Student "B" is 16 years of age, has Down's Syndrome (mongolism), and functions in a moderately retarded range intellectually.

This boy has received two years of training in the resource setting in prevocational and home management skills which have led to vocational training in a car-care center developed by the staff at the school. He is learning work skills in being on time, proper use of tools, individual job responsibilities, care of equipment, good washing and polishing techniques, getting along, and making decisions. Three years earlier this boy had been a serious behavior problem in a self-contained private program, but after beginning at the vocational center, that behavior very quickly disappeared. The change is attributed to two significant factors: (1) he was expected to perform responsibly as a young adult and was treated as such, and (2) he received relevant training which has greatly improved his self-image. Next year he will be placed with a local car dealer for preparing vehicles for delivery.

Student "C" is 18 years of age, has mild mental retardation, and has a very difficult time with abstract information and application of such on a job.

This student's program is a classic example of staff persistence in developing appropriateness in vocational training. She was placed in several different vocational settings, and, for a variety of legitimate reasons, couldn't seem to succeed in any. The staff took a microscopic look at the apparent causes of failure and concluded that she needed to have a job broken down into its prerequisite parts, and required an individual supervisor-teacher when performing duties. Her field of vocation was nurse's aide in the health care field. Her training was conducted in four settings: the resource room, the vocational classroom, a hospital, and a convalescent center. An additional problem during the first year was a very poor self-image, but, as she gained confidence in each skill, the problem lessened until disappearance. The resource

teacher taught the individual tasks which were later performed in the vocational class and at the hospital as a total activity individually supervised by a nurse. An example is taking and recording blood pressures. She had first to learn proper care in handling the equipment, how to read the information, the use of charts, the operation of the equipment, and numerous other individual tasks which made up the activity as a whole. Because of her slower learning rate she required individual task teaching and supervision, and this approach to training was an absolute necessity in her case, which proved very successful. Subsequent to graduation this year she will be employed in a local convalescent center as an aide.

Summary

Vocational training for handicapped youth of all types and degrees is more limited by a restricted imagination than by what a student cannot do. An expanded concept of vocational development can provide a brilliant new dimension to the lives of handicapped persons which once were limited to sheltered workshops, minimal skills jobs, and charity. We have learned from experience that these past limitations need not be. Decent programming requires appropriate vocational evaluation, community resources for both training and jobs, and sensible learning centers in the school which are models of the job outside. Utilization of special education staff, vocational education staff, and community business staff for training will provide the most relevant learning. Charting the flow of this type of program would appear as illustrated on Figure 1.

Vocational Program Components

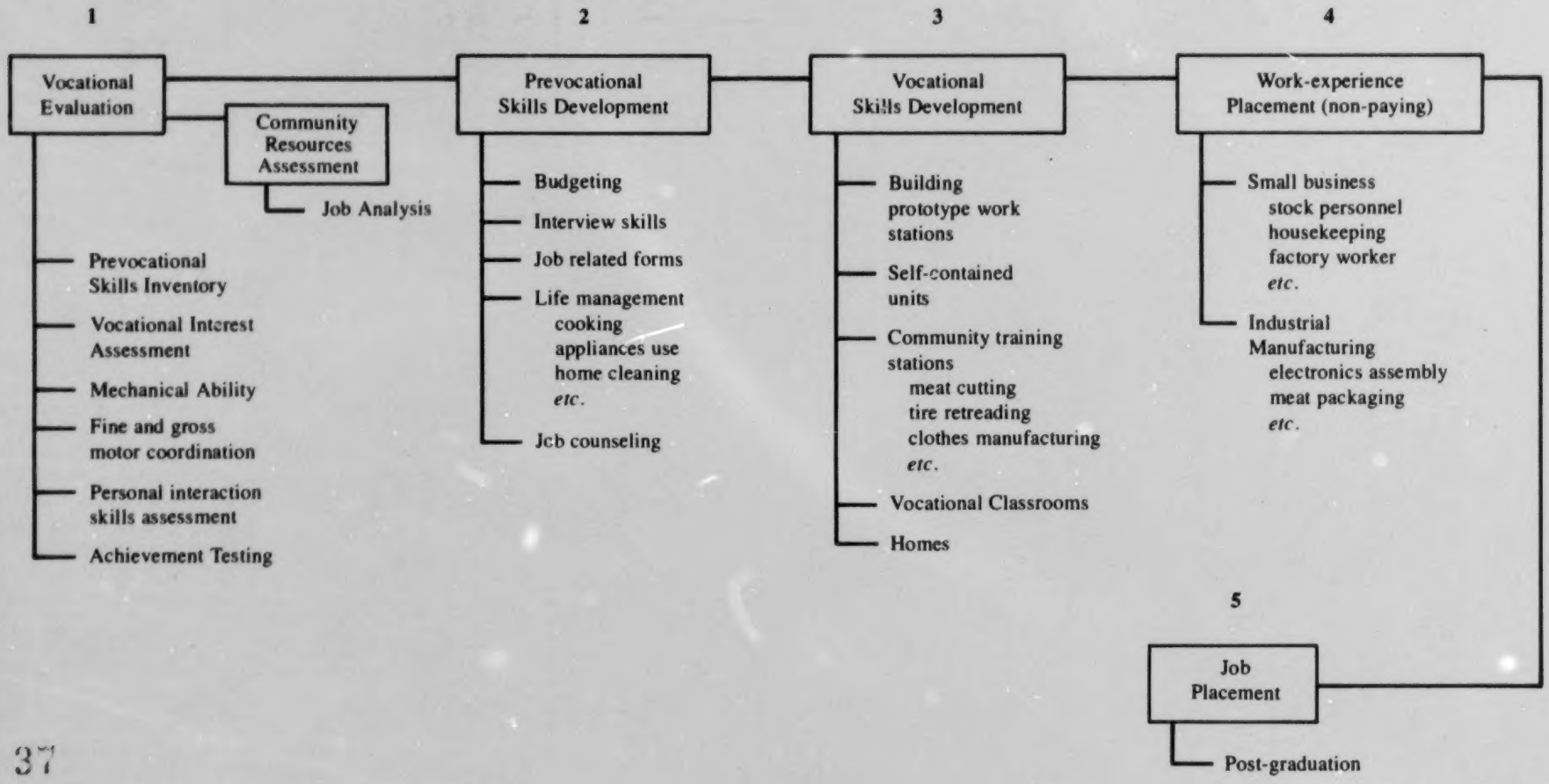

FIGURE 1

7. PREPARING NONHANDICAPPED STUDENTS FOR THEIR "SPECIAL" PEERS

by William Victor Maconachy

The author presents a practical approach for preparing the vocational educational community, teachers, students, and administrators, for the mainstreaming of handicapped students. Before reading this chapter, take this short test on famous persons who were handicapped. Answers are found in Supplement 2. Mr. Maconachy is Coordinator, Vocational Support Service Team, Bladensburg Senior High School, Maryland.

FAMOUS PERSONS WITH HANDICAPPING CONDITIONS

Activity 2.1

MATCH the 13 famous persons:

1. Albert Einstein	"Slow Learner"	( )	First to sail around the world
2. Handel	Lame	( )	Won the Battle of Trafalgar
3. Stephen Hopkins	Palsy	( )	Served as President of U.S.A.
4. Magellan	Lame	( )	Won 3 gold medals
5. Beethoven	Deaf	( )	Composed ninth symphony
6. F.D. Roosevelt	Paralysis	( )	Invented the telephone
7. Lord Nelson	Amputee	( )	Wrote *Paradise Lost*
8. Wilma Rudolph	Polio	( )	One of world's greatest actresses
9. Humphrey Davey	Lame	( )	Signed Declaration of Independence
10. Alexander Graham Bell	Deaf	( )	Discovered Sodium & Potassium
11. John Milton	Blind	( )	Composed *The Messiah*
12. Sarah Bernhardt	Amputee	( )	Invented the light bulb
13. Thomas Edison	Deaf	( )	Theory of Relativity

The increased incidence of handicapped pupils participating in vocational education programs with their nonhandicapped peers has increased significantly in recent years. Prompted by various reasons (law, advocacy, school policy, funding, *etc.*) there is cause for concern that these placements are occurring at a pace faster than the receiving vocational environments may be prepared to accommodate. Albeit these conditions exist, the fact remains that vocational education is being turned to more and more to help prepare youth for the world of work. One reason for this is the dire prediction that two out of every five handicapped youths leaving our U.S. school system in the next four years will be underemployed. Nationally this represents one million youths. Another 950,000 of these youths will be unemployed, idle at home much of the time, or be totally dependent and institutionalized. (Samual Barone, USOE Bureau of Education)

Given these conditions, and the fact that vocational education plays a major role in preparing pupils for employment, we must include the handicapped in these career preparation programs. The interdisciplinary approach to meeting the needs of these youths does not have to be a cataclysmic event in the lives of those involved. It can be a rewarding and fruitful experience when accounting for the following considerations:

1. As Hoyt (1976) indicates, the pupil will be receiving vocational training as part of "...a sequence involving, in a progressive manner, (a) career awareness; (b) career exploration; (c) career motivation: (d) career decision-making; (e) career preparation: (f) career entry; (g) career maintenance and progression."[1]
2. Vocational education should have "provided information to IEP participants to ensure that handicapped students receive appropriate preparation for later participation in vocational education."[2]
3. Special education must assure that the pupil is operating in his/her most appropriate environment, and the pupil must receive needed special education intervention and support while operating

in the vocational education environment.

4. Support must be given to the receiving vocational teacher which will assist that teacher in understanding and meeting the needs of handicapped youth. This should include information in areas such as verbal skills, cognitive skills, psychomotor/physical skills, as well as other pertinent data.[3]

This effort would lead to a "Cooperative Instructional Arrangement (CIA) (which) is really a tailor-made, individualized plan for systematically coordinating programs, services and other inputs needed to provide comprehensive, well rounded instruction."[4]

Given these arrangements, one might conclude that the assimilation of handicapped students into regular vocational classrooms would be all but a foregone conclusion. However, one more element must also be considered and prepared for, the human element. The students and teachers in those classrooms about to begin working contact with handicapped students, often for the first time in their lives, must be prepared for such a venture. They must individually and collectively acquire the mental set conducive to initiating such changes in their environment. This requires preparation of four segments of the education population: school administration, school staff, the nonhandicapped peers, and the handicapped students. As Dahl indicates, "Uncertainty and apprehension among handicapped students and school staff will likely be overcome only gradually at first, then increasing in rate of speed as momentum builds up."[5]

School administration and staffs may be prepared for this cooperative interdisciplinary mainstreaming via in-service projects. Such projects may be coordinated through many state departments of education and higher institutes of learning. The handicapped students may be prepared for mainstreaming through programs with their counselors and teachers. However, the nonhandicapped peers working and learning with these handicapped students also have needs that must be met. They have attitudes which they need to assess. They have preconceived, and often erroneous, notions about handicapped persons which need to be brought in line with realistic expectancies. They have fears which need to be allayed. All of these elements may be addressed by means of a process of systematic desensitization. In short, it requires a reprogramming of attitudes and knowledge regarding association with the handicapped. This program follows a sequence of operations:

Phase One: Initial Assessment
Phase Two: Information Sessions
Phase Three: Reevaluation and Discussion
Phase Four: Placement of Handicapped into Environment
Phase Five: Followup.

These activities could be conducted by a member of the special education staff, the guidance staff, a special advocate, by the actual classroom teacher, or by a combination of any of the above. In any case, the actual process should be presented by a person or persons who are advocates for the integration of handicapped students with their nonhandicapped peers: an advocate who is truly dedicated to the concept of pupils performing to the criterion of ultimate functioning.[6]

Activities for this sequence may include:

Phase One: Initial Assessment

- Activity 1.1 Introduction of session leader(s), and explanation of purpose.
- Activity 1.2 Administration of attitude assessment (Supplement 1)

Phase Two: Information Sessions

- Activity 2.1 Complete and discuss famous persons matching assignment. (Supplement 2) Focus of discussion should be to elicit inquiry as to how those handicapped individuals met with success: What "qualities" they may have had, what they may have done differently, *etc.*
- Activity 2.2 Activities which may be used to address anxieties and fears:
  - 2.2.1 Role play as a handicapped individual
  - 2.2.2 Complete and discuss answers to Fact Sheet (Supplement 3)
  - 2.2.3 Act out encounter sessions where the actor must work with a handicapped person (portrayed by a group leader)
  - 2.2.4 View and discuss films which discuss/depict handicapping conditions. A sample of these films includes:[7]

    A Button in Her Ear. By Ada B. Litchfield & Eleanor Mill. Educational Enrichment Materials, filmstrip (41 frames).

    Angela's hearing deficiency is detected in a series of sometimes amusing, often frustrating, misunderstandings.

A Day in the Life of Bonnie Consolo. Barr Productions. 16mm, 16 1/2 min., color.

Bonnie, a woman born without arms and hands, appears as a well-adjusted adult who capably looks after her children, husband, and home.

Handicapism. By Douglas Biklen and Robert Bagdam. Human Policy Press, 1978. 139 color slides, script and cassettes tape.

A color slide show features prejudices, stereotypes, and discrimination practiced against people with disabilities.

Including Me. University of Illinois, 1977, 16mm, color, 40 min.

Children with various handicapping conditions enjoy proper educational opportunities.

Out of Left Field. American Foundation for the Blind. 16mm, 7 min.

A demonstration showing how blind and visually impaired youth can be integrated with their sighted peers.

2.2.5 Distribute and encourage a review of books dealing with this topic:[8]

Cavana, Bettie. *Joyride*. New York: Morrow, 1974, 222 pp.

Since Susan has been lame from polio, her high school friends, now greatly preoccupied with boys, see her as asocial and involve her less and less in their activities.

Christopher, Matt. *Glue Fingers*. Illus. by Jim Venable. Boston: Little, Brown, 1975. 48 pp.

Billie Joe refuses to play football with a team because he is afraid he will be ridiculed when he stutters.

Corcoran, Barbara. *A Dance to Still Music*. Illus. by Paul Robinson. New York: Atheneum, 1974. 192 pp.

The sense of isolation that deafness often imposes is felt by Margaret. Resenting the suggestion that she attend a school for the deaf, Margaret starts to hitchhike back to Maine.

Smith, Gene. *The Hayburners*. Illus. Ted Lewin. New York: Delacorte, 1974. 64 pp.

Joey, a man with the mind of a ten-year-old, leaves the institution where he lives to spend the summer working on a farm.

2.2.6 Discussion session with adult guest who is handicapped. Explore topics such as barrier-free architecture, economic problems of the handicapped, *etc*.

Phase Three: Reevaluation

Activities: Administer activities found in 1.2 and 2.2.2. Graph the changes in a score and discuss this growth.

Phase Four: Placement

Introduce the handicapped student to the environment.

Phase Five: Followup

Conduct periodic review and evaluation of acceptance/progress with the placement. This can be done

on both the formal (interview/form assessment) and informal basis (observations, discussions, . . .).

The preparation of the nonhandicapped peers to work with a handicapped student is critical to the success of the intergration attempt. "To many people, handicapped individuals are to be pitied, to be helped, and to feel luckier than . . . This attitude is not a productive one for either the handicapped or the nonhandicapped person."[9]

In the words of Ernest L. Boyer (U.S. Commissioner of Education), "I believe it is vital that handicapped persons participate in all aspects of education from preschool through adulthood. Elementary, secondary, and adult education must provide the education and training for specific occupations. And cooperation is essential between the educators and employers so students can move successfully from school to jobs."[10]

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Supplement 1

ATTITUDE CONTINUUM

Activity 1.2

Working with the Handicapped

ID: _____ ____ Pre ____ Post Date: _____

On the scale below, check how strongly you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I know as much as I care to know about the handicapped					
2. Handicapped students are the ones who most often disrupt classes.					
3. Handicapped students always act out their problems.					
4. Handicapped students cannot be managed in a "normal" classroom.					
5. In plain words, handicapped students are dumb.					
6. In plain words, handicapped students are lazy.					
7. Teaching the handicapped students takes up too much of the teacher's time from other more deserving students.					
8. All handicapped students need a lot of help from specialists.					
9. I am not prepared to work with handicapped students.					
10. I find working with the handicapped annoying.					
11. I am afraid of catching what the handicapped students have.					
12. The handicapped should be taught in schools away from other people.					

Supplement 2

FAMOUS PERSONS WITH HANDICAPPING CONDITIONS

Activity 2.1

MATCH the 13 famous persons:

1. Albert Einstein	"Slow Learner"	( )	First to sail around the world
2. Handel	Lame	( )	Won the Battle of Trafalgar
3. Stephen Hopkins	Palsy	( )	Served as President of U.S.A.
4. Magellan	Lame	( )	Won 3 gold medals
5. Beethoven	Deaf	( )	Composed ninth symphony
6. F.D. Roosevelt	Paralysis	( )	Invented the telephone
7. Lord Nelson	Amputee	( )	Wrote *Paradise Lost*
8. Wilma Rudolph	Polio	( )	One of world's greatest actresses
9. Humphrey Davey	Lame	( )	Signed Declaration of Independence
10. Alexander Graham Bell	Deaf	( )	Discovered Sodium & Potassium
11. John Milton	Blind	( )	Composed *The Messiah*
12. Sarah Bernhardt	Amputee	( )	Invented the light bulb
13. Thomas Edison	Deaf	( )	Theory of Relativity

ANSWERS

First to sail around the world	4	One of world's greatest actresses	12
Won the Battle of Trafalgar	7	Signed Declaration of Independence	3
Served as president of U.S.A.	6	Discovered Sodium & Potassium	9
Won three gold olympic medals	8	Composed *The Messiah*	2
Composed The Ninth Symphony	5	Invented the light bulb	13
Invented the telephone	10	Theory of Relativity	1
Wrote *Paradise Lost*	11		

Adapted by Vic Maconachy from a similar activity developed by Howard County Public Schools, Maryland.

Supplement 3

Activity 2.2.2

This is not a test for grades, just a few questions for you to answer quickly. Answer either true or false.

1. All handicaps occur during early childhood. F
2. On the average, employed disabled persons earn less than their nondisabled counterparts. T
3. Handicapped employees often have lower accident rates than nonhandicapped employees. T
4. The turnover rate in employment for handicapped workers is lower than for nonhandicapped workers. T
5. The blind have better senses of hearing. F
6. Handicapped workers, properly placed on jobs for which they are fitted, have as good or better safety records than the so-called able-bodied. T
7. All handicaps are permanent. F
8. There are nearly six million mentally retarded persons in the U.S.A. alone. T
9. Mental retardation is contagious. F
10. All cerebral palsy persons are mentally retarded. F
11. A person with a blind disability is at more of a disadvantage than a person born deaf. F
12. Epilepsy is caused by emotional disability. F

8. VOCATIONAL TRAINING FOR TRAINABLE MENTALLY HANDICAPPED STUDENTS

by Barbara Sarwar

This chapter suggests that entrepreneurship, using the talents of mentally retarded young people, can be rewarding without being exploitive. Contracts within the local business community can yield benefits to both student and merchant. The author is an Education Specialist and Educational Diagnostician with the Artesia Public Schools, New Mexico.

Trainable mentally handicapped students have limited academic ability and limited vocational potential. Because of this limited ability, their need for vocational training is greater. It is the hypothesis of this author that vocational training will aid trainable mentally handicapped students achieve occupational and economic self-sufficiency as adults.

William M. Cruickshank and G. Orville Johnson write that, "It is better for those trainable mentally retarded to be actively engaged in some 'worthwhile' activity...." They also state that workshops were developed for the trainable to make a significant productive contribution, but that this has not proved true because overhead costs have been consistently greater than the total income of the workers.

Interviews with workshop personnel have indicated that one of the primary reasons for this high cost factor is that clients coming to the workshops have received no prior training. Workshop directors indicated a significant time lapse between entrance in the workshop and attainment of a high productive level. This training is time consuming and costly to a workshop. Therefore, it appears that vocational training in the school is of significant value, not only in increasing productivity, but in reducing postschool training costs to private and tax-supported programs.

In response to this need, various marketable skills have been examined with regard to vocational training within the public school setting. It should be noted here that the cooperation and freedom allowed by the administration plays an important part in developing such programs.

What special skills are needed within a given community or in geographically accessible areas? These are the skills that must be taught in preparation for adult inclusion in such vocational activities. The skills must be analyzed in a task analysis method by identifying all of the skills needed to perform each activity. These skills should be taught independently of the activity. For example, if the vocational activity requires cutting, folding, or tying, these skills can be taught in the classroom throught art activities. Sorting and counting activities have many possibilities for pretraining in the classroom.

Workshops usually fall into three categories. One is the workshop that is an activities center. The objective of this is to provide social and crafts activities which enable trainable mentally handicapped adults to find an interest and companionship outside of the home environment. There is usually little or no monetary reward to the client from these centers.

The second is a workshop that makes salable items which are either sold directly to customers or through local merchants. Clients are paid as their product is sold. The items include macrame articles such as pot hangers, ceramic items such as flower pots used by local florists, or ceramic beads for macrame, greenhouses which sell plants or seedlings, and other items such as packages of bows. Students in these workshops are paid according to piecework.

The third type of workshop is one which has contracts from industry and is paid per piece for completed items. This workshop may have contracts from companies for packaging their product, as three screws, hooks, *etc.*, per plastic sack, or they may actually produce the article, as paper sleeves for use by commercial florists. The larger the community or the more industrial the community, the more possibilities there are for contracts. Clients are again paid in piecework so speed and accuracy are important to insure a reasonable income.

Outside of the workshops there are several possibilities for employment. One is in the area of janitorial or cleaning services. Another is employment in a factory where a routine assignment is possible. Greenhouses provide possible work with routine jobs. Food service is another possibility with busboy and cafeteria service as two vocational skills areas.

How do you train a student for these skills? First of all the student must be cooperative and capable of sustained activities in the same area. For example, a student who is able to pursue an activity for two hours is much more likely to be able to work at a job. Increase attention span through behavior modification. Rewards can vary from food or small toys to money. Students who are paid for their products are usually much more eager to perform.

If the class activities are mostly arts and crafts, where will the money come from? Almost every community has arts and crafts shows. Be a member of the local arts council. Sell the students' projects at reasonable prices and pay the students. If the teacher is not willing to be involved in these after-school activities, perhaps parents can be involved in the sales area.

An essential part of these sales is that the craft item must be well-made with few or no mistakes. One class in New Mexico makes sufficient profit from one such sale to sustain the craft program for the balance of the year, pay the students, and hold a spring banquet at a local restaurant. Items sold by this class vary with the current craft trends, but macrame owls continue to be their best seller. These owls sell for $5.00 and use approximately $1.50 of material, with $2.00 going to the student who did the work. This is a simple pattern found in almost all beginning macrame books. Mistakes are strictly not allowed, and the students often work two or more hours without a break to complete them. One of these owls won a first prize at the local county fair. Advertising for macrame items is by word-of-mouth, and the price is low enough to make it increasingly attractive.

Ceramics is another salable product, although there is considerable expense involved in the purchase of a kiln, molds, and slip or greenware. However, a great many workshops do use ceramics, and it may well be worth the expense in its training value.

All of these arts and crafts type activities should be set up in an organized fashion with worktables and assigned jobs for each student. Vary the jobs so each student will have the opportunity to learn every job. A work period should begin at a certain time with regular breaks of five to ten minutes. These breaks can be called "coffee breaks" to help with understanding for regular employment. Time between breaks should be extended to two hours as is usual in industry.

Training for contract piecework makes a good vocational class training project. In this case it is necessary to get your "contract" from a local businessperson. One such contract might be sorting nuts, bolts, screws, nails, *etc.*, for a local hardware store or lumberyard. Start your project on a volunteer basis and as the students become proficient, suggest a small donation. This can develop into a paying project for your vocational class.

Another contract may be your local wholesale florist who uses large quantities of paper sleeves for delivering plants. These are simple to make by tearing a large roll of brown paper into triangles (there is no paper loss incurred), then folding these triangles into cones, gluing them along the outside edge, and placing them in stacks of five. These can be sold for 5¢ each, or the current price in your area, which allows 2¢ each to pay the students.

Almost all levels of trainable mentally handicapped students not behaviorally disordered are able to learn all of the activities described above. It may take some time to teach these skills, but these activities have no requirements which should exceed the students' level of learning.

Outside of the workshop there are several employment possibilities, such as janitorial or cleaning services. It is often possible to have one or two students work within the school, helping the custodian. They may start by emptying the wastebaskets daily or by using the push broom to clean the halls. Occasionally there are federal funds or rehabilitation funds available to pay students for such training; however, even if no funds are available, the training may well lead to employment with a janitorial service.

Another type of cleaning service might include cleaning private homes. A span of two hours would enable four students and an adult aide to vacuum, dust mop, make beds, and clean bathrooms. It should be stipulated that defrosting refrigerators, cleaning ovens, waxing and other more time-consuming tasks would not be a part of the service. It is often possible to start this with volunteers from the teaching staff who live close to the school and would rather not spend every weekend cleaning. Again, a fee should be extremely reasonable, more of a reward than a salary during the training period.

Work in greenhouses can frequently be set up with a cooperative wholesale florist in your community. Here it will be necessary to limit the activity to two students with an aide or adult supervisor. This training would be under the direction of the wholesaler with the adult following through with the students on directions until they become learned skills. This is an activity for the more capable, older student in vocational training.

The food service area may begin in the school cafeteria, clearing tables, scraping trays, preparing utensils for the dishwasher, and perhaps serving food. This again would require supervision throughout the learning period and may work into paying employment for the student, if funds are available.

The vocational ideas set forth above barely touch on the possibilities available for trainable mentally handicapped students. Teachers of the trainable mentally handicapped have reported riding sanitation department trucks with students during training, riding buses to and from work with students, finding employment for students

in the clothing industry, carrying cut pieces from the cutting room to the sewing room, and on and on.

An important factor in vocational training for the trainable mentally handicapped student is the teacher. It takes a person willing to learn a variety of skills in order to teach them, and a person willing to go beyond the four walls of the classroom to find an appropriate teaching tool or environment.

There is no doubt that a trainable mentally handicapped student with appropriate vocational training in the actual employment environment can gain some degree of economic self-sufficiency as an adult. This student as an adult may need living supervision, such as in group homes, but as an adult can find independence in the economic area and thereby the self-confidence to be a satisfied part of society. Workshops may have to be non-profit, but the value of self-worth cannot be counted.

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9. THE HANDICAPPED STUDENT IN INDUSTRIAL ARTS

by Harvey Warner

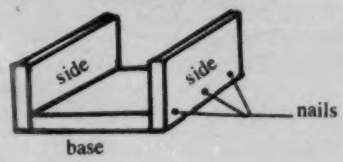
This chapter presents suggestions for improving success rate in the classroom, regardless of the teaching assignment. The author is an Industrial Education teacher in the Decatur Junior High School, Indianapolis, Indiana.

Many times we educators tend to look for the differences among our students rather than the aspects that they share. Handicapped students do have differences that distinguish them from the average student, yet all students share many traits useful in the educational process. Students respond to positive experiences. Students have interests that can be used to motivate. Students like to see the results of their work. And, students like hands-on activities. The Industrial Arts curriculum can offer many valid learning experiences to handicapped students if the instructors use the common traits of the students in the program.

A program that is organized effectively and efficiently aids an educator in teaching handicapped students. An educator must know the present levels of the students, the goals they should attain, and the methods for reaching these goals. In the Industrial Arts curriculum, a product is usually the goal. The instructor must identify the best method to complete the product. It helps the handicapped student learn more effectively if the steps in producing products are broken down. A very good example of this would be the traditional birdhouse produced in an Industrial Arts class. If an instructor walks into a room of handicapped students and says, "Build a birdhouse," there is a high probability that all the students would not be able to complete the assignment. If the instructor presented each student with blueprints for a birdhouse, most students still would be unsuccessful. If the instructor organized the steps in producing the birdhouse and broke down those steps, most of the students would enjoy success. Sample instructions might be as follows:

> Take the two sides of the birdhouse; they are the same size.
>
> Place the two sides on opposite sides of the bottom and nail them in place using a claw hammer and nails.

A simple drawing will add that much more success to the directions.



In short, if content is organized so that nothing is left to chance or guess, many potential problems are solved before they occur.

Individualization may also increase the success of a program. Just as in a "regular" classroom, the handicapped students have different abilities and interests. If these interests and abilities are incorporated into producing products, the individual students will usually be more successful. If a student is a good artist, then the instructor should encourage this with products that use this talent, such as silkscreening, wood carving, or some area of drafting and design. The handicapped student is again like the regular student in that a student with little interest in a product usually does not do an outstanding job on production. Individualization may also occur on the same product. It would be unfair to expect each handicapped student to complete the task of attaching the two sides to the base of the birdhouse within the same time span. People work at different rates of speed. One student might work five minutes to complete a task and another student might require two hours. There is nothing wrong with working at different rates. For example, do all teachers grade papers as fast as each other? The rate of work is not as important as completion of the work successfully.

There is no doubt that organizing and individualizing take the teacher a lot of time. This time is well spent when it enables the handicapped student to have a more rewarding learning experience. It is also hard for an instructor to find enough time to help each individual student. Two ideas that might allow the student and instructor more one-to-one contact are audiovisuals and lab helpers. Posters, cassettes, handouts, and models can

answer many of the student's questions and thus free the instructor for more helping time. A poster that demonstrates the correct method for sanding a piece of wood will answer many of the student's questions before they are asked. A tape cassette with an accompanying rule handout explaining how to read a rule will put many students on the right path. A full-sized model of a birdhouse with all parts labeled would undoubtedly help many students. Another valid method to free the instructor for more time with each student is to utilize lab helpers. This author utilizes lab helpers from a higher grade who are in study halls or have free periods. These lab helpers can stay with a student on a one-to-one basis. If a handicapped student is to use a miter box to cut a piece of lumber, a lab helper may stay with the student to help in the task. It is important to point out that these lab helpers are not instructors and should not supervise students on machinery or in dangerous operations but should supplement the instructor. A positive side effect of utilizing lab helpers is the positive effects it has on the lab helpers. Lab helpers tend to be more self-assured, confident, and willing to accept responsibility after aiding other students.

In producing anything, many problems must be solved. If the instructor tries to identify and solve problems that students cannot handle, many potential problems for students fade. If handicapped students tend to have problems laying out parts of a product with a pencil and rule, the instructor might produce full-size drawings that the students can tape to their wood and cut out. The instructor who has identified this layout problem before it occurs can create ways, such as full-size models, to solve the problem. It would be impossible for any instructor to be able to identify all problems. It is essential that an instructor be able to improvise and innovate with handicapped students. If a lesson does not work one way, change the approach and try again. One very common problem in labs that educators identify with handicapped students is the cleanup. If lab helpers are utilized, this will cut down on some of the potential cleanup problems. When finishing products, a small idea such as the type of stain will eliminate many cleanup problems. If latex stain is used it is easy to clean off the tables, tools, students, and students' clothes, but if oil-based stain is used, the outcome may be permanent. If the students feel a sense of pride in themselves and their lab that has been encouraged by the instructor, then the lab will always be clean at the end of the school day. The lab may be very untidy during a work period, but if twenty students pitch in to clean the lab, it will be in good order in a short time.

It is very important for an educator to build on the success of a program. In any unit taught there will be successes and failures, and the instructors should take the ideas that work and build on them. In the case of a birdhouse the handicapped student may not be successful in cutting out the parts but successful in attaching the parts. The instructor may build on the successful aspects of attaching the birdhouse by precutting the more difficult parts so that the students can be successful on their product. Everyone likes success, and we all know that success reinforces our learning. It is good to remember here that if one is afraid to risk failures, successes may not be great ones.

Every person appreciates and responds to positive comments, and handicapped students are no different. A positive comment or a pat on the back may do wonders for a student's self-concept. It is important to point out that handicapped students are usually not showered with positive comments and thus a postive comment becomes that much more important. Even if a student may temporarily fail in a task, it is important to be positive. Stress the good things that happened.

It is also an educator's responsibility to know his or her students. The abilities, aptitudes, and backgrounds of the students are important. Items such as height which might limit ones's reach on machinery, loss of limbs or sight, and medical conditions must be identified by the instructor. Much of this information may be gained from student records to which educators have access. A conference with a fellow educator who knows the student may be helpful. A conference with the parents will also add insight. This author feels that a conference with the student, in private, is most effective. Simply ask the student if he or she can handle the task and discuss any potential problems you foresee.

The handicapped student is capable of succeeding in a wide range of learning experiences in the Industrial Arts lab. It is up to us educators to look at the similarities that these students share with any other student and structure a learning program that will serve their educational goals. This will take time, planning, and effort on the part of an educator, but our students are well worth it.

10. VOCATIONAL EDUCATION FOR DISABLED LEARNERS: THE PROMISE AND THE REALITY

by Paul Hippolitus

The author presents both the promise and the reality of what is happening as a result of the three prescriptive laws now in effect. He also discusses the laws and barriers that need to be overcome before the handicapped students reach their potential. Paul Hippolitus is an employment adviser with the President's Committee on Employment of the Handicapped where he directs the Committee's activities in the area of education. In addition, he is currently the Chairman of the State Advisory Panel on Special Education for the District of Columbia. (This material originally appeared in Disabled—USA, *the monthly magazine of the President's Committee on Employment of the Handicapped.)*

"Welcome!" the superintendent proclaimed. "Welcome to our school district!"

"You know we're quite proud of what we're doing here for our older handicapped students," he added as he escorted me into his office. Without any more prompting, the superintendent of this medium-sized school district began to outline in both numbers and programs the situation of the area's disabled students.

I had come to learn more about how new legislative mandates such as the Education of All the Handicapped Children Act (Public Law 94-142) and the Vocational Education Act were impacting on local school districts. I had not come to document violations but to learn where the problems were. I told the superintendent pointedly that I wanted his candid opinions. He agreed.

We talked for more than an hour. "We've been mainstreaming our handicapped students into the regular high school program for years—long before these new laws required it!" He proudly told me. When I heard this I became somewhat suspicious. He must have noticed the change in me, because he quickly added some facts and figures that seemed to indicate much was really going on.

He told me that $25,000 had been spent this year alone on new materials and support services for the special ed high school students. Also, he talked about the quality of the work-study program which was in operation for secondary level handicapped students. And, he told me about the integration of handicapped students into the regular vocational program. The laws seemed to working here.

My next interview was with the high school principal. The area high school had a vocational wing. It was quite an impressive program. My conversation with the principal reinforced the facts and figures I had been told by the superintendent. Generous amounts of money were being spent to insure appropriate materials and support services for handicapped students. A quality work-study program was in operation. Regular education teachers accepted handicapped students into their classrooms. And, handicapped students were integrated into the regular vocational education program.

The next stop was the last stop in the "chain." Onto the classroom and a visit with the classroom teachers. But what I learned from them made me feel as if I had just been transported to another school district! The classroom teachers told me an entirely different story from what I had just heard from the superintendent and principal. "Oh, yes, we mainstream our handicapped students into the regular classroom; but most of them leave the program before the end of the year," I was told bluntly. Out of a student population of 1,700 students only 34 handicapped students remained on the high school's rolls by the year's end. Where were the rest? Well, most of them had been sent at the beginning of the year to regular classrooms without much needed support. After repeated failure they simply gave up in despair. And, what about the $25,000 for materials and support services? "That's not right! We only got $250 for materials this year and no real support services." By this time I began to realize once again that it's a cold, cruel world out there.

My last interview was with the work-study coordinator. It took some looking to find him, but I finally did. I asked him about the type of program he had for his special ed students. He began with, "I do what I can for them." Well, the program was, simply, to get the special ed students a job at the fast food restaurant or the car wash. "How often do you visit the students on the job?" I asked. "Oh, I try to get by to see them twice a year," was his reply.

I had heard enough. And, I'm sorry to have to report,

I've seen this kind of situation at many other local education agencies across the country. The problem is widespread. It boils down to this: the promises that responsible authorities have made for an appropriate education for our older disabled students are not yet being realized. The plight of our secondary and post-secondary special education student is dramatic. Consider the facts. Only 1 percent of all vocational education students are disabled. Remember, about 11 percent of the school-age population is disabled. About 3 percent of the student population in our nation's community colleges is disabled. Less than 2 percent of our four-year college student population is disabled. And, the most telling statistic of all is the dropout rate for special education students in high school. It's been found to be about five to six times higher than for nondisabled students.

How can this be? Three very prescriptive laws make the rights of handicapped students to an education quite clear. The "Education of all the Handicapped Children Act" (Public Law 94-142) requires an individualized education program for secondary-level special education students, with the right to prevocational and vocational objectives in the least restrictive environment. The Vocational Education Act (Public Law 94-482) requires that 10 percent of the vocational education monies be set for handicapped students. Section 504 of the Rehabilitation Act of 1973 (Public Law 93-112) calls for nondiscrimination against the handicapped in education programs and reinforces the requirements of the two previous laws. In short, the commitment—the promise—is there. Our nation has committed itself to serving handicapped youth in public education. Yet too many programs like the one described above still exist. Why?

Well, there are many answers to this question. Some people would offer a "litany" of technical difficulties that cause there to be a difference between what we have promised to do and what we are actually doing for our older handicapped students. Some of these include: the need for changes in the basic legislation, the need for interagency agreements, the need for more money, the need for preservice programs, *etc*. While these may or may not be legitimate needs, I believe they are clouding the real reasons for the lack of response in education to the needs of handicapped youth in secondary and postsecondary education. And it's about time we took a hard look at these real barriers to a full implementation of the new laws and look for ways to overcome them.

The first barrier that is causing us great difficulty in translating the promise of the laws into substantive programs is the widespread belief in education that it's somebody else's job to get disabled young people ready for work. Generally, it's felt that the state/federal vocational rehabilitation program is the agency responsible for this effort. Therefore, the reasoning concludes, Why should we in education, including vocational education, have to worry about it?

Well, the facts in the matter are these. Every year the state/federal vocational rehabilitation program serves approximately 300,000 handicapped people nationwide. Of that number, approximately 60-80,000 are handicapped youth. The remainder of the handicapped population served are older handicapped individuals. When we realize that approximately 650,000 handicapped young people leave our nation's education system through graduation or termination of eligibility each year, we begin to realize that the state/federal vocational rehabilitation program is nowhere big enough to serve our young handicapped population. So while it may make some sense to point to vocational rehabilitation as the place where the vocational preparation of handicapped youth should take place, the facts and figures don't support this premise. If education doesn't teach career-related skills to handicapped youth before they leave the school system, the chances are about 1 in 10 that vocational rehabilitation will do it for them. So, accessible vocational education for handicapped youth is desperately needed.

The second barrier basic to our failure to make the promise of recent legislation a reality centers around the low expectation syndrome subscribed to by both education and the general public. This is captured in the often-heard question, "Well, what can they do—realistically?" When I'm asked this question, my answer is always the same.

It's this. When the human spirit is evolved, anything is possible! I personally know a blind surgeon (relax—he does autopsies), a double leg amputee who teaches karate, an armless swimming instructor, an armless police detective, a blind sportscaster, a deaf priest, a mentally retarded counselor, and on and on.

If disabled people have demonstrated this kind of determination in seemingly impossible careers, then it's reasonable to conclude that deaf students or blind students or paralyzed students or mentally retarded students can succeed in vocational education. The fact is they already have. In short, handicapped people of all disability categories can be found in just about any occupational category. It really depends on the drive or ambition of the handicapped individual and on the support and ingenuity of the teacher. So, let's stop trying to learn which jobs specific disabilities can perform. Instead, let's look at the power of the human spirit and look for unique ways to make it happen—not for reasons why it can't happen.

The third barrier to the full implementation of the new legislative mandates stems from the assumption on the part of the regular education teacher that in order to be able to serve handicapped students, a whole new body of information must be learned. It's almost as though

there are some well-guarded secrets that must be revealed before a regular vocational educator, for example, can teach any handicapped students. The assumption is that these students are different from all others and before a regular education teacher can deal with them, new masterful techniques must be learned. Consequently, a tremendous urge exists not to admit one handicapped student into the regular classroom until special training is received.

There's more myth associated with this position than truth. Sure, some severely handicapped students will always require highly specialized instruction and might more appropriately be served in a special setting. But this category of disabled student is a small precentage of the entire disabled student population. The image that their needs project, however, is too often generalized to reflect all disabled students, regardless of the severity of the disability. Well, this perception just isn't true, much less fair. Many disabled students can be appropriately served by regular vocational education. And this fact needs to be understood.

The reality is handicapped students do have a disability. And oftentimes this means that the environment and the instruction may need to be modified in order to minimize or alleviate the effects of the handicap. This may mean a physically accessible classroom for non-ambulatory students. It may mean a reader or reader services for blind students or for learning disabled students. It may mean a sign language interpreter for deaf students. It may mean curriculum modification. All of these accommodations are to the environment and to the method of instruction.

These special accommodations don't require acquisition of new educational theories by the regular education teachers. What is needed is to ask the handicapped student or special education teacher what the handicapped student's needs are and then to make the adaptation so that learning can commence. The point is handicapped students are, first and foremost, students. A good teacher can teach most disabled students if the obstacles to learning are resolved. It's being done every day. Even in vocational education.

The fourth barrier to accessible vocational education for handicapped youth centers around the need for special education to develop secondary programs that contain prevocational and career education instruction. Currently, special education is not adequately addressing this need. Too many handicapped students trying to get into vocational education aren't ready for vocational education. They haven't been exposed to any prevocational skills. They have no career education experiences. The vocational education teachers are thus forced to spend instructional time on the prerequisite skills which could have been learned in secondary special education. This making up of lost time causes the handicapped student to fall even farther behind the rest of the class. The probability for success is greatly reduced. So, it's going to have to be a team effort. Special education is part of the team and must begin to beef up its efforts in this area. Vocational education needs the help of special education.

There is one more basic problem which needs to be addressed before the laws and policies in this field become a reality. It's really the most basic of challenges in our democratic society: it's developing political force. At present the handicapped constituency, including special educators, parents, disabled students, and other advocacy groups, has not yet fully realized the need for an organized effort in this area. Much of the cause for the lapse between legislative promise and programmatic delivery is the low priority that this issue has at the local level. There doesn't seem to be enough pressure, locally, to do anything about it. Parents of handicapped children generally have not yet recognized their children's right to vocational education. And handicapped people themselves as well as the related advocacy organizations have so many battles to wage that this issue has not been adequately addressed. But the tide is rapidly turning. The word is filtering down that handicapped youth are wrongfully being excluded from vocational education. Soon local education administrators will be feeling increased pressure to provide for the vocational needs of handicapped students. When this happens significant progress should begin.

One final thought. The decade of the seventies has been one of great promise for handicapped Americans. In addition to the new laws in education, we've made great legislative strides in the areas of affirmative action for handicapped people in employment, accessible transportation, and the removal of architectural barriers. The net result of these legislative advances is jobs. As never before, there are jobs, good jobs, waiting for qualified handicapped people to fill them. Unfortunately, we have not yet been able to take full advantage of these new opportunities, because the job preparation system, especially education, has not begun to equip enough handicapped young people with career skills. Until the entire education system, including vocational education, begins to meet its obligations to handicapped students, the promises we have made will remain promises unfulfilled.

The following publications are available, free of charge, by writing:

Paul Hippolitus
President's Committee on Employment
of the Handicapped
Washington, D.C. 20210

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"Resources for the Vocational Preparation of Disabled Youth" — An annotated bibliography and resource list for information on the vocational preparation of disabled students.

"Affirmative Action for Disabled People" — An introduction to legislative programs affirming the rights of handicapped people in employment. Sections 503 and 504 of the Rehabilitation Act are covered.

"People — Just Like You" — a six-hour lesson plan for teachers of nonhandicapped students on disability and the potential of disabled people.

"Guilty Buildings" — An introduction of the subject of environmental barriers facing physically handicapped people.

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11. THE EDUCATION OF BLIND STUDENTS IN INDUSTRIAL ARTS BY USING MAINSTREAMING SKILLS

by Alfred Yarnott

Alfred Yarnott has been employed by the Veterans Administration-Blind Section and has continued his professional career for the last eight years at the Minnesota Braille School. In this chapter the author discusses the "tactual print approach" as used with blind students in the Industrial Arts Shop.

In the past, industrial arts has been overlooked in the education of the blind student because of attitudes like "it is too dangerous" or "we are not prepared." The new law that deals with the education of the handicapped, deals with the necessary changes but does not give educational approaches. In order for a blind student to be successful in an industrial arts class one useful approach is what I will call the use of mainstream skills. Mainstream skills are those techniques that allow a blind student the educational experiences, from a tactual world, that sighted peers have from a visual one. This approach prepares the student before entering the mainstream class. Therefore two important areas need to be met: (1) an assessment of the student's mainstream skills and (2) the teaching of those skills based upon the completed needs assessment.

Needs assessments usually are used to determine the problems or weaknesses that a student may have. The assessment[1] that is offered will not follow such an approach. It is intended to display the strengths and needs that are to be provided for by the educational system. The vision teacher is the key person to meet these needs because of his or her knowledge of the student and ability to coordinate the staff.

Figure 1 is an example of a completed assessment. To complete the form the vision teacher should meet with the industrial arts teacher to determine: (1) which machines will be used, listed in blanks under Orientation and Mobility section, and (2) which measuring tools will be used. Then place a dot in each box according to the students needs. The dot must represent the strengths or needs of the student. With this completed, a line is drawn to connect one dot to another. This will give a graph showing the needs and strengths of the student. The final section of the form states the needs of the student and the staffperson who will be working with the student.

The material that follows will allow a blind student to meet the goals and objectives of an industrial arts class. This is a critical point which Dr. William Wargo points out more clearly, "It must be strongly emphasized that for the special needs student the basic content, goals and objectives of industrial education should remain the same. We mention this because frequently industrial education teachers feel that a drastic revamping of educational objectives is necessary for teaching the handicapped. But if this were so, the purpose of providing equal educational opportunity for all special needs students would be defeated."[2]

The use of Orientation and Mobility (O & M) is a key factor in the student's ability to complete the requirements of the class. These techniques will be discussed based on two room diagrams—a metal shop (Figure 2) and a woodworking shop (Figure 3).

The first step is to give the student a general idea of the room's layout—"room familiarization." It must include those areas in which the student will travel; this information can be obtained from the industrial arts teacher. This teacher is a key person because he or she knows what areas are necessary, based on what is taught. In using this technique divide the room into four parts: (1) seating: either at a bench or typical seating arrangement, (2) the tool cabinet and the workbenches, (3) the area where the machines are, and (4) other areas in the shop. This information would be presented in a methodical way so each part relates to the other parts in turn.

When this is accomplished, the student should begin using upper hand and lower forearm which I am calling "upper guard," and lower hand and lower forearm which I am calling "lower guard" (see Figure 4) and move from the door to the seating area or benches. Note that the names given to these two terms are important for safety reasons; therefore, they should be employed in the short form.

The student is now ready to begin moving from the door. As the student moves into the metals shop, the important landmarks that will give the student directionality should be pointed out. Landmarks are objects that are in a fixed place and are generally not movable. As shown for the metals shop the student should note the bench and then the tool cabinet as landmarks because a turn at the cabinet will be made to get to his/her seat. This

Student _____ O & M Specialist _____

Date _____ Vision Teacher _____

Class _____ Industrial Arts Teacher _____

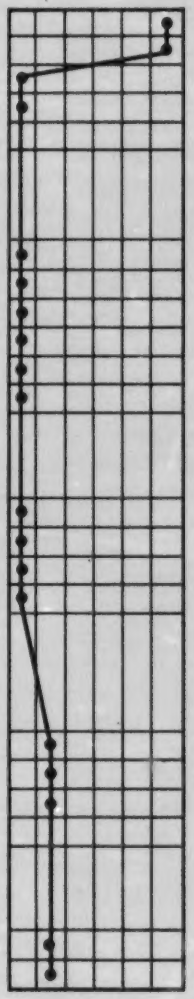
Assessment Profile

Area of Needs

Orientation and Mobility

Needs **Strengths**

Upper Guide (upper hand and upper forearm) .....
Lower Guide (lower hand and lower forearm) .....
Using the Above, Moves to: Seating Area .....
: Tool Cabinet .....
: Other Areas .....
: Machines .....



1. Powermatic 8" Jointer _____
2. Rockwell 15" Drill Press _____
3. Dewalt 9" Radial Arm Saw _____
4. Powermatic 10" Table Saw _____
5. Oliver 13" Surfacer _____
6. Boice Crane 12" Bandsaw _____

Use of the Four-Step Pattern of Safety

1. _____
2. _____
3. _____
4. _____

Use of Measuring Tools

1. Howe Press 12" ruler _____
2. Howe Press 36" ruler _____
3. AFB 12" ruler _____
4. _____

Textbooks

Readability of Charts .....
Readability of Tables .....

FIGURE 1

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Know How to Use an Aid

Tactual Prints

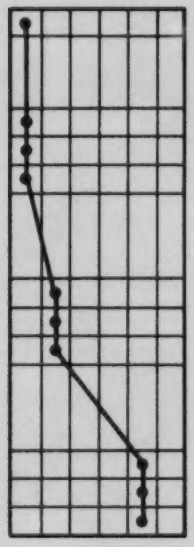
Know the Material .....
Has Experience with Reading .....
Functional Experience .....

Aggressiveness

Toward Using Machines .....
Getting Teacher's help .....
Using an Aid .....

Braille Skills

Braille Reading .....
Slate and Stylus .....
Abacus .....



Area of Needs	**Key Staff Person**
1. General Orientation and Mobility	
2. Orientation and Mobility to Machines	
3. Measuring Tools	
4. Readability of Charts and Tables	
5. Use of Aide	
6. Tactual Prints	
7. Aggressiveness	
8. Four-Step Pattern of Safety	

FIGURE 1—*Continued*

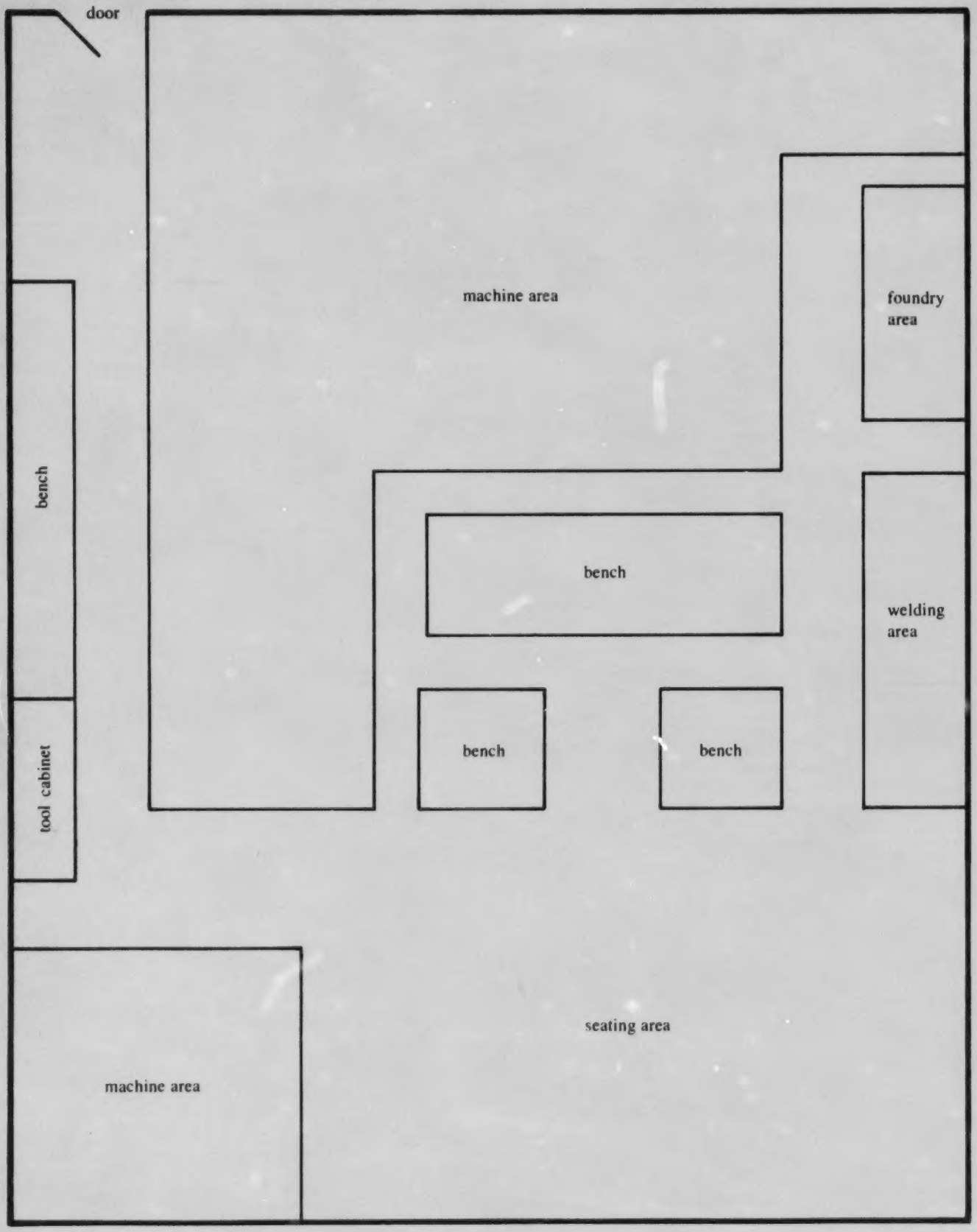

door
machine area
foundry area
bench
bench
welding area
bench
bench
tool cabinet
seating area
machine area

FIGURE 2

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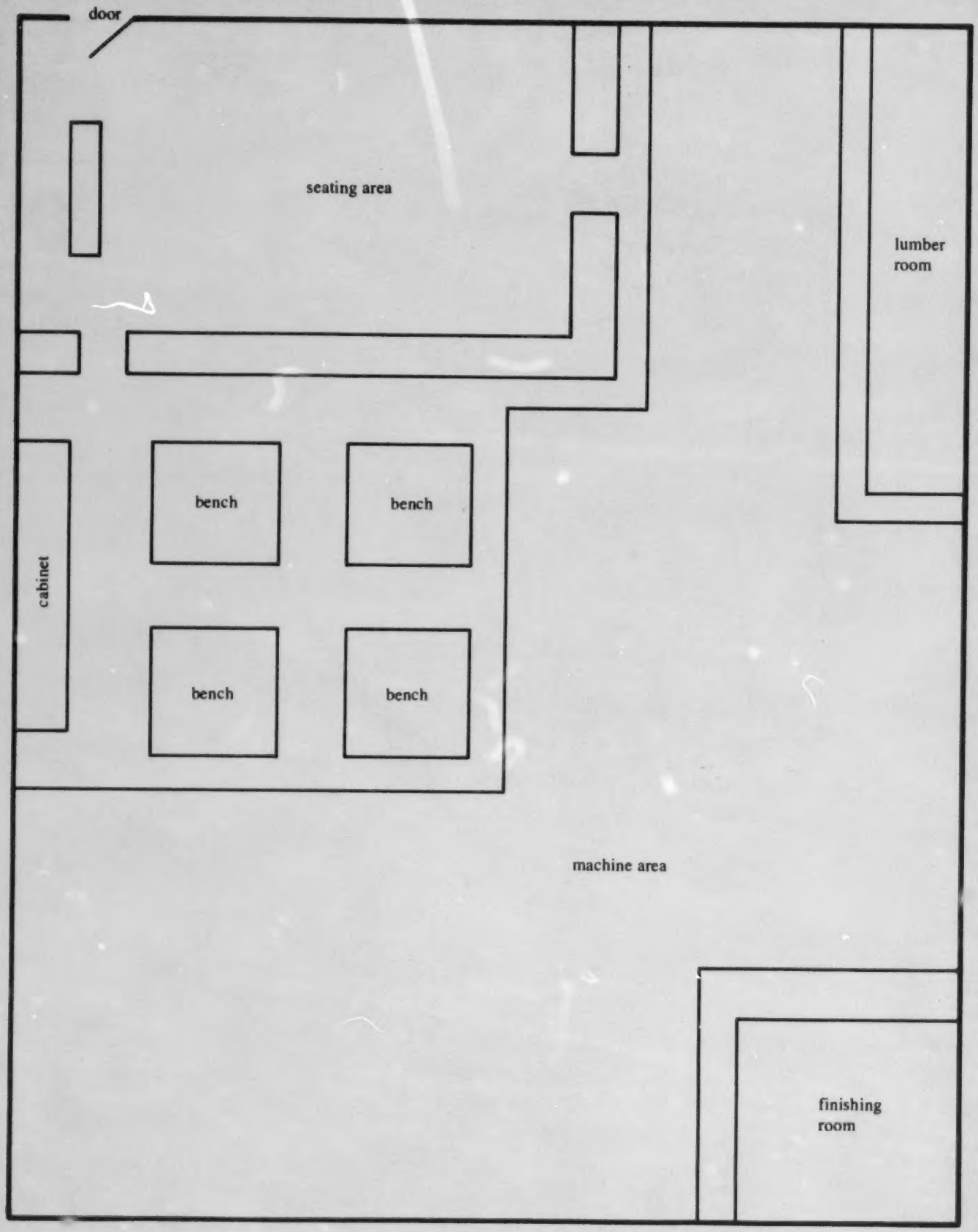
door
seating area
lumber room
bench
bench
cabinet
bench
bench
machine area
finishing room

FIGURE 3

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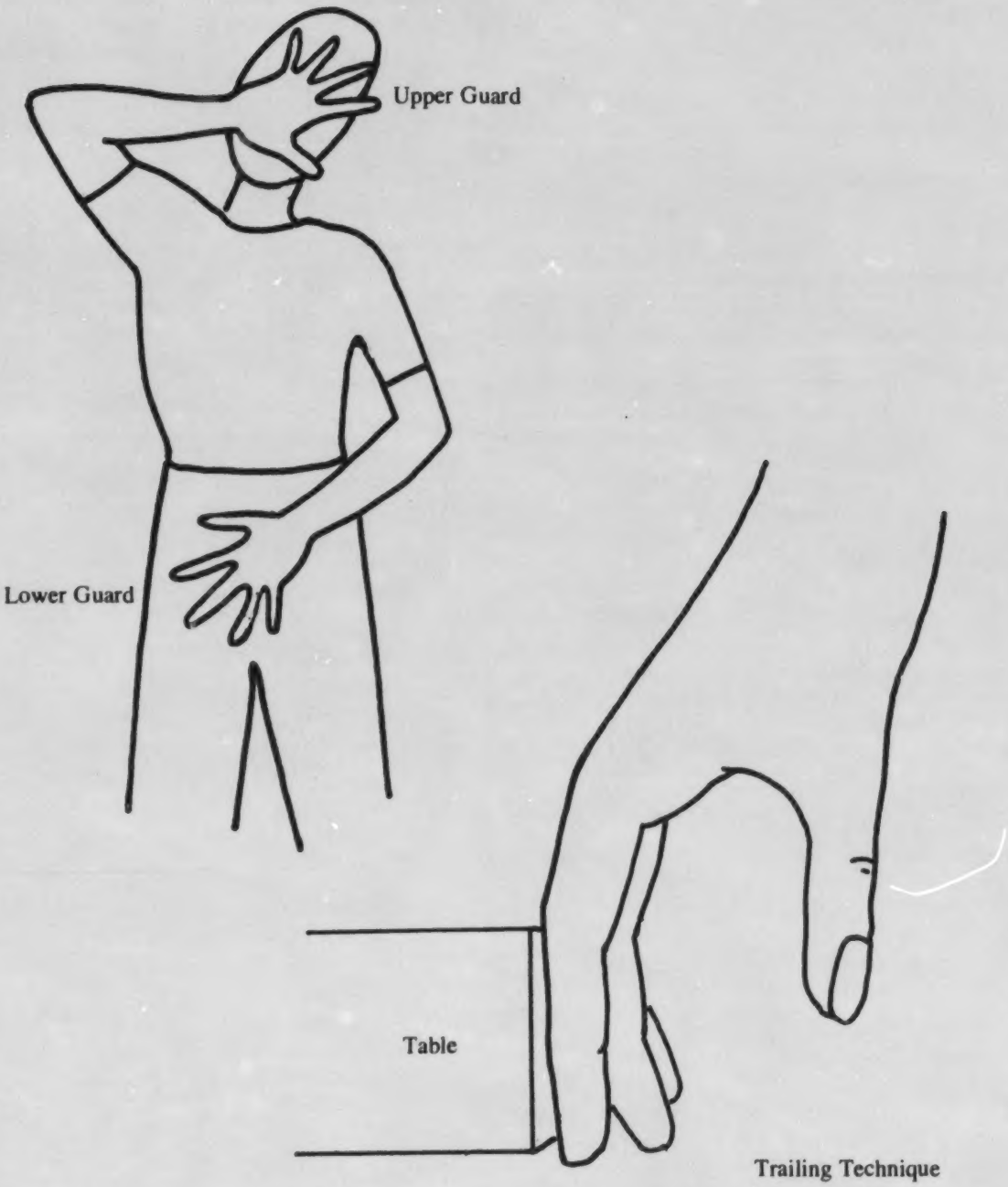


FIGURE 4

route should be traveled until the student can move to his/her seat freely and confidently.

The next phase should start from the seating area. The student should move from that area to a bench and in doing so should again use upper and lower guard until contact with the bench is made. Then the student should use the "trailing technique" (see Figure 4) for going around each of the benches but use the guards when going to the cabinet. Note that this will have been mastered when movement to a bench or to the tool cabinet does not require a specific route. Note that after a student has moved around the benches he or she will normally not use the trailing technique, and this should be allowed. The movement to and from the machines, the next point, is the most difficult. This is because the shapes of the machines are so varied. This can be overcome by individualizing each machine; in other words, the student must first examine the machine for shape. Once the student knows the machine he or she will then start from a known object and move to that machine. After that, each machine is again examined and movement starts from the known machine.

The remaining information is included for safety purposes. The student must become proficient in using the Four-Step Pattern of Safety.[3] The general points are: "(1) approaching and making primary contact with the machine, (2) observing the state of rest or motion of the machine, (3) following safe paths from the primary points of contact to and from points of observation of the progress of the work, and (4) observing by sound and touch the progress of the work being done."[4] This information is used so the student can feel free to move about while using techniques that reflect his or her modality.

The application of O & M techniques for other areas in the shop, i.e., the finishing room or the foundry area, is too complex to include in this chapter. The best approach is to concentrate on those specific areas which the student will need to work in.

The O & M technique that the student has mastered will do little good if he or she is not allowed to use it. To accomplish this, the industrial arts teacher should spend time observing the student learning and incorporating the above-mentioned techniques. The teacher should also learn the use of "sighted guide" (see Figure 5). This is used to move quickly to any area in the shop. In using it other students will be willing to use the technique and the "ice" will be broken between the students.

Basic Skills

As was mentioned, an understanding of what a machine is shaped like is important to good orientation and mobility. The basic skills approach is different in that the emphasis is put on knowing all the parts of the machines by their names and knowing what each part does. There is little to be gained from hearing words during a lecture concerning the parts of a machine and how to use them and then having to wait until the teacher has the time of exhibit the machine or its parts. It is more meaningful for the student to know the parts and be able to participate in a demonstration tactually. It brings to light the fact that although the blind student learns by a different means, he or she is still capable of doing as much as the sighted students.

Measuring Tools

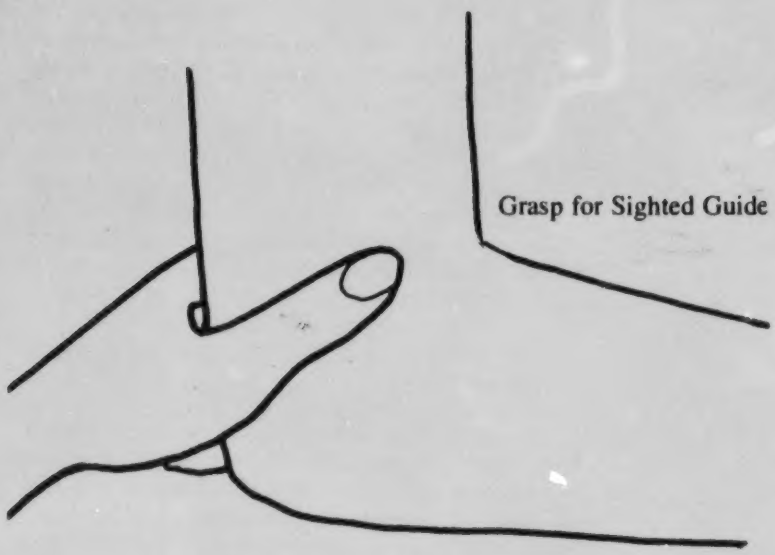
The use of some of the measuring tools for the blind may pose a problem to a teacher trying to teach a print understanding since the blind student learns in a tactual way. The AFB's braille ruler measures to one-sixteenth of an inch, similar to the common print ruler, but if the student does not know where to find the measurements or how to apply it to the work because of teaching methods then he or she must fail. Therefore the student should learn to read the needed instruments correctly and also understand how each reading was obtained prior to entering the shop. It will be very embarrassing to a student if while being observed he or she cannot measure a simple distance.

Textbooks

Textbooks for the class should be the least of our concerns but must be monitored. The chief undertaking is in brailling books which have charts, tables, and pictures. Note that it is not necessary to reproduce the pictures or the captions. The charts and tables should be transcribed. They should mirror the ease and speed of availability that the sighted student is afforded. This means that as much as possible, they should be put into braille in the same manner as a print text.

Using an Aide

In some cases it will be necessary for an aide to help a blind student. Even so the blind student must use the aide as a tool. The aide is to do those things that require sight, such as determine walnut from butternut, clear plexiglass from smoked, and read numbers on a bar stock of steel such as 1117 or 4140. The aide will be responsible for measuring when distances are not within the capacity of the braille tool—for example, a distance of 5' 6-11/32". An aide is not to: (1) stop a blind student from making a mistake unless it involves his/her safety, (2) read printed material unless the teacher wants it that way, (3) help move the student around the shop.



Grasp for Sighted Guide

Use of Sighted Guide

FIGURE 5

Aggressiveness

The discussion here concerns the positive or aggressive elements in education that allow for controlling and using the environment to obtain a goal. Because the student will be required to use tools and machines that are potentially dangerous, the student must feel master of them. The student must know that the machine cannot cause injury unless he or she does something nonsensical. This is also true for the work in class. Whatever the results, it is the student's responsibility, good or bad. Aggressiveness will help the student in obtaining assistance from the aide or teacher as well as in using a tool. With regard to obtaining help, the student must understand that the teacher has other students and will offer help only when sought out.

Tactual Prints

It is my observation while teaching industrial arts to blind students that they lack a system to measure a project, the sizes and shapes of its parts; and lack the ability to evaluate the quality of their work before, during, and upon completion of the project; and lack the ability to solve problems. This difficulty is caused by the lack of tactual prints. Tactual prints are not the raised line drawings that have been called for in many professional texts and magazines. These raised line drawings are sighted blueprints that have only replaced the printed work with braille ones. This is the major reason they do not work for the blind. The tactual prints that I have developed are divided into two parts: the title page and the tactual image page.

The title page gives general information about the totality of the project. It can be thought of as what the isometric drawing is for a sighted person. The information on the page will be the name of the project, the overall height, width, and length of the project, the total number of braille images, and the number of parts to the project.

The tactual image page is an organization of the information found on a working drawing into a tactual presentation for the blind. It includes three views with the deletion of actual numbers from around any of the views; letters are used instead. (See Figure 6.) An index contains all essentials—the name of the part, the material the part is made of, and all technical and distance information.

A case study is helpful in understanding what can happen to a student if the prints are not used when needed. The student is a 15-year-old totally blind student. She is making a small footstool of which she has cut the top out. She is not using tactual prints. Next to be made are the side rails. I told her to measure her top and let me know its size. I told her the size would be the same for her side rails. She had the ruler on the top but didn't say anything. I repeated the same information but the puzzled look did not go away. After a while I talked to her and she said she did not know why she had to measure her blouse. This confusion would not have happened if the student was obtaining information from a print. This is the danger when oral directions are given.

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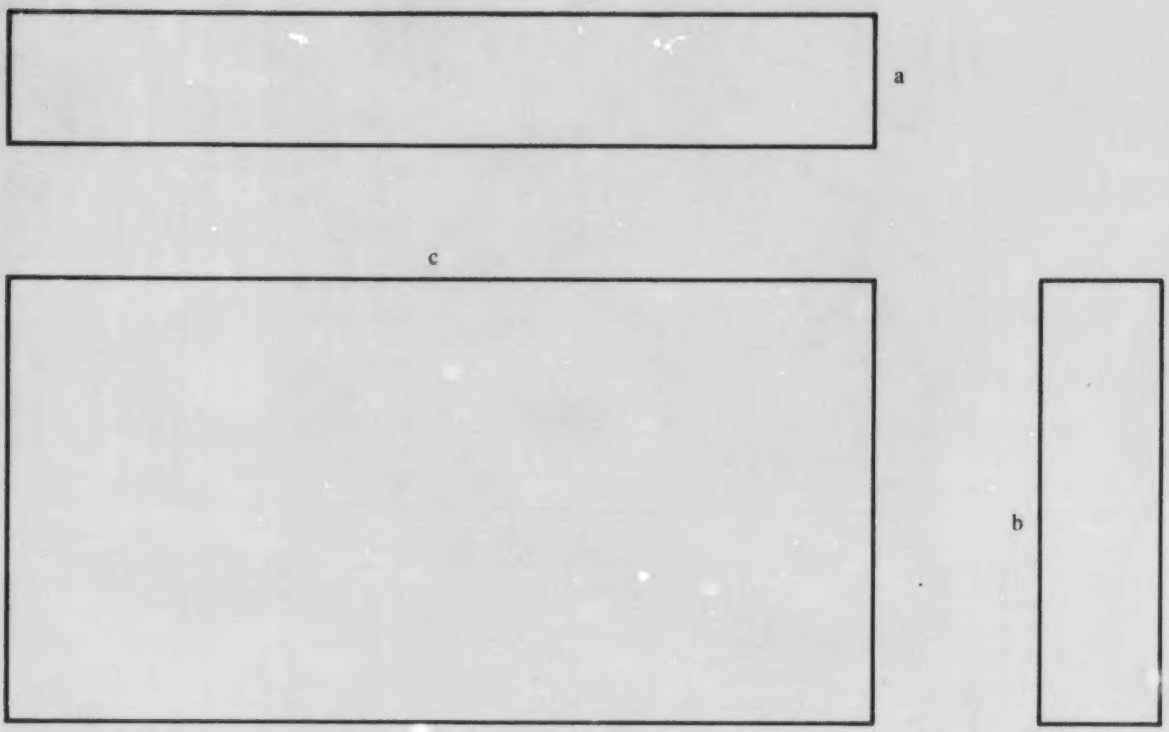

Top
Hardwood
a. ___ × ¾ "
b. ___ × 12 "
c. 15 × ___

FIGURE 6

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12. TEACHING STRATEGIES FOR BLIND STUDENTS IN PHOTOGRAPHY

by Raymond L. Blackstone

The author demonstrates the creativity of the classroom teacher in describing some of his teaching strategies used with blind students in photography class. Mr. Blackstone is a Vocational Commercial Photography teacher at Jack Yates Senior High School, Houston, Texas.

During my fourteen years of teaching Vocational Commercial Photography, I have often told my sighted students that film developing is one area of their trade that blind people could accomplish successfully. This statement is based on the fact that color films and panchromatic black and white films, which are sensitive to all colors of light, must be handled in total darkness for at least part of the developing process. My theory was that blind people would be more adept at learning the necessary skills due to their reliance on the sense of touch. Many sighted students are actually handicapped when learning to handle film in total darkness due to their reliance on sight as part of their learning process. These students often have difficulty in making the transition from learning the skill with the aid of vision to performing the skill without being able to see what they are doing.

This year, for the first time, I had the opportunity to test this theory. In addition to my vocational classes at Jack Yates Senior High School in Houston, Texas, I also teach a Communication Arts Photography class for the Magnet School of Communications located on the same campus. This class differs from the vocational class in that it meets for one period per day and currently lasts for only six weeks. One of my Communication Arts Photography students this year was Steve Kerr, a remarkable young person, who has been legally blind since birth.

Communication Arts Photography students are taughthe history and theory of photography, camera operation, exposure determination, film processing, contact printing, and enlarging. To aid in teaching these skills to Steve, I devised several techniques. For operating the exposure and focusing controls on the camera, I decided to use the same technique that I use to teach sighted students to handle film in the darkroom. This technique is clock dial-face orientation. In other words the equipment is handled in the dark by turning it to positions corresponding to the hour markings on a clock dial, *i.e.*, straight up is 12 o'clock, to the right is 3 o'clock, *etc.* Steve has a braille watch and was already familiar with clock orientation. To help Steve determine the distance to his subject for focusing the camera, I taught him how to pace the distance and use his cane to measure. He was taught to aim the camera by pointing it toward sound. For processing film and prints, clock orientation was used as well as working from left to right.

To maintain interest in the course, I like to have the students demonstrate newly acquired skills and theory as soon as possible. One method I use for this is the making of pinhole camera photographs using Polaroid film. A 4 x 5 view camera for which there is a Polaroid film adapter is converted into a pinhole camera by removing the lens and replacing it with a piece of aluminum foil in which a hole is punched with a straight pin. The camera shutter is used to control the length of time that light is allowed to pass through the pinhole and expose the film. With Polaroid 3000 Speed Type 57 film, the exposure time is about 1/25 of a second in bright sunlight when the pinhole is 5 inches from the film.

The pinhole camera is unique in that it cannot be focused, yet subjects at any distance from the camera will be equally sharp. Since the image produced on the ground-glass viewfinder of the view camera by the pinhole is dim and difficult to see, the camera is usually just pointed in the direction of the subject and approximately aligned.

Steve has a good sense of direction based on sound, and I decided to let him take the first picture. The camera was placed on a tripod for support. The first photograph was to be a group shot of the rest of the class. After one of the other students had set the shutter speed, Steve used the rod-like monorail base of the view camera to point the camera in shotgun fashion toward the shouts of the class. He then snapped the picture. Steve's first photograph was perfect, well centered and correctly exposed. The Polaroid print was eagerly described to Steve by his classmates. Needless to say, Steve, his classmates, and I were all exhilarated by this accomplishment.

From the encouraging first success with the pinhole camera, we next moved to the operation of the twin-lens reflex camera. My classes presently use the Yashica Mat 124G as a basic camera. This camera has adjustable exposure and focusing controls and a semi-automatic film transport and shutter cocking system. Sighted students set the controls to the appropriate f/stops and shutter speeds by aligning numbers with pointers and focusing on the ground glass.

The shutter speed-control dial has click-stop detents at each of the marked shutter speeds. After Steve learned the complete sequence of shutter speed numbers, he could simply turn the dial fully clockwise until it stopped at 1/500 second and then turn the knob counterclockwise the appropriate number of clicks to the correct setting.

The aperture dial which is calibrated in f/stop numbers and controls the intensity of the light exposing the film does not have click stops. By turning the dial fully clockwise and then placing a finger at the 12 o'clock position, the dial can be turned counterclockwise until the finger is at successive clock dial positions to set the correct f/stops. For instance 12 o'clock is f/35, 10 o'clock is f/4, 9 o'clock is f/5.6, *etc.*

While the camera has a built-in exposure meter, I teach the students to determine daylight exposure based on the lighting condition and the American Standards Association (ASA) film speed index (sensitivity rating). Basically, the bright sun exposure for any film is equal to an aperture of f/16 and a shutter speed equal to the reciprocal of the ASA rating. For instance, the bright sun exposure for an ASA 125 film is f/16 and 1/125 second. From this point the correct exposure can also be determined for cloudy days and open shade by changing the f/stops.

I thought Steve would have to be told the lighting condition before he could determine the exposure, but I was surprised when he informed me that the sun was shining because he could feel the heat when he stepped out of the shade.

To determine the distance from the camera to the subject for setting the focus, two methods were devised. For short distances Steve's folding cane is jointed in one-foot sections. By pointing the cane at and touching close-up subjects Steve could then count the sections of the cane between the subject and him and determine the distance. For distances over five feet, Steve would pace off the distance from the subject to the camera. Since his pace is about two feet long, Steve simply counted the paces and multiplied by two to get the distance in feet.

The focusing knob on the camera is in the infinity position when turned fully clockwise. By placing a finger at the 12 o'clock position the knob can be turned counterclockwise until the finger points to successive clock-dial positions. Luckily some of the distance settings in feet correspond with the same clock settings, *i.e.*, 9 feet is at 9 o'clock, 7 feet at 7 o'clock, and 3.3 feet at 3:30 o'clock. By using these focusing techniques, the preceding exposure determination and setting procedures, and aiming toward sound, Steve was able to produce a photograph of one of his classmates equal in all aspects to those produced by the other students.

My initial theory was proven when Steve did learn to develop film. In order to develop roll film, the film is first loaded onto a processing reel. A processing reel consists of two sides constructed by forming heavy-gauge stainless steel wire into flat circular coils. These sides are separated by four squared off "U"-shaped wire supports. Film is inserted in a clip on the central support and wound in the coil from the inside out. The coils serve to keep each layer of film separated from the preceding one. This allows the chemicals used in processing to contact all of the film. The film will go on the reel correctly in one direction only.

Students are taught to hold the reel in their left hand with the end of the spiral at the top or twelve o'clock position pointed toward their right. The film is then cupped in their right hand and inserted into the reel at the three o'clock position. After the film is attached to the clip in the reel, the reel is turned counterclockwise pulling the film into the spirals. The film is then placed in a light, tight tank for processing in room light.

The processing timer used to control the length of the developing steps has click stops for each minute setting and a large knob for setting seconds. Setting the time presented no problem, as Steve counted off the clicks for minutes and set the second hand by clock orientation, 5 seconds for each hour position. Our lab does not have equipment that can be easily adapted for measuring liquid chemicals or taking temperatures by touch, but I understand they are available. Steve therefore did not get to measure chemicals or take temperature. With a temperature-controlled laboratory at least one of these skills would not be necessary. Processing the film for specified times in developer, stop bath, and fixer arranged in tanks in a left to right order, and washing and drying the negatives were easily accomplished by Steve.

Contact printing did not present many problems for Steve. He was able to determine the emulsion sides of the film and paper by touch. By orienting these toward each other and the paper emulsion toward a fixed light source, the only requirements left were covering the negative paper sandwich with glass, setting and operating the timer, and developing, washing, and drying the prints.

The only skill that Steve was not able to accomplish was making enlarged prints from negatives. This requires the ability to focus visually the image projected by the enlarger, which was impossible for him to do. An autofocus enlarger would overcome this difficulty, but our equipment does not include one.

Teaching a blind person skills in a trade that is basically visually oriented was both a challenging and rewarding experience for me and for the student. These accomplishments were, to a large extent, a direct result of the successful adaptation of clock orientation and other techniques to the manipulation of a number of controls on various pieces of equipment. No less amount of success was due to this amazing young man with a high degree of motivation, interest, and determination. Steve Kerr proved to me that with a little ingenuity on the teacher's part, a physical handicap need not be a learning handicap.

13. VOCATIONAL EDUCATION AND WORK EXPERIENCE FOR SEVERELY HANDICAPPED SECONDARY-LEVEL STUDENTS IN A PUBLIC SCHOOL

by Michael Friedl

This chapter addresses the need for community involvement in developing a vocational program for the severely handicapped. It suggests some strategies that may be used by teachers to initiate the cooperation of local businesses and some ways the curricula should be designed to facilitate the transition of severely handicapped from the classroom to job sites within the community. The author is a Vocational Specialist with the Jackson County Education Service District, Oregon.

Public Law 94-142 has had a tremendous impact on services for the severely handicapped. The advent of P.L. 94-142 has entitled all persons, 3-21 years of age, to a free and appropriate education. However, what is the most appropriate type of education for secondary-level students who cannot read, may not be able to count, or may lack fine and gross motor abilities to perform specific tasks? Termination of educational services for severely handicapped persons at 21 years of age leaves few viable options for this population. Historically they have had limited opportunities to participate in work-experience and vocational education programs that would facilitate their acquisition of skills for competing in the labor market. Many persons assume that severely handicapped students are unable to master vocational skills and become part of the mainstream. However, several researchers (Bellamy, *et. al*, 1979; Kelley and Simon, 1969; Bellamy and Snyder, 1976; and Wehman, Hill, and Koehler, 1979) have indicated that severely handicapped students can participate effectively in far more vocational opportunities than are usually provided. What has limited the performance of many severely handicapped individuals is not their inability to learn complex tasks, but, rather, a lack of appropriate opportunities (Brolin, 1976). Therefore, a secondary-level curriculum for severely handicapped students should focus on marketable work skills within the community where the students reside. The curriculum should incorporate actual job placements that will provide severely handicapped students with on-the-job training and exposure to the demands of competitive employment.

Development of a Secondary-Level Curriculum

To develop and implement effectively a curriculum that is community-based, the teacher should complete an ecological analysis of the community. That is, the teacher should analyze the community in relation to the following: (1) the types of businesses that presently exist, (2) the number of businesses that may be potential job placement sites, and (3) the types of work skills necessary for specific jobs. The information from an ecological analysis will enable the teacher to decide the scope of the curriculum and its adaptation for in-class activities. With an idea of the work skills that are in demand, the teacher can utilize community organizations, such as the American Red Cross, the Sierra Club, local nonprofit agencies, or local colleges and state universities to obtain various jobs (*i.e.*, collating, sorting, stapling, assembling, *etc.*) to obtain work that may supplement the curriculum and train students within the classroom setting. The selection of jobs should be varied so that they encompass as many work skills as possible. The teacher can incorporate these jobs and design various work stations within the classroom. The students are assigned to specific work stations until each job skill is mastered. Each station would consist of similar tasks, *i.e.*, sorting, tool use, stapling, *etc.* These tasks are comprised of specific work skills and related skills, such as interpersonal communication and social interaction skills. Thus the students are learning appropriate work skills and social skills necessary to adapt an actual job situation.

In order to determine the work skills involved in a particular job task, the teacher can complete a job analysis. A job analysis provides a systematic breakdown of a particular task or job and enables the teacher to identify the various components that must be learned in order to complete it successfully.

A job analysis facilitates the development of a training program specifically tailored to meet the needs of individual students. That is, some students benefit from learning a job task in small, graduated steps; whereas

others may acquire a skill more quickly, and an elaborate sequential breakdown may not be necessary.

The teacher must also bear in mind that the job tasks can and should be modified to accommodate some of the student's limitations. For example, a work aid, such as a wooden tray with several compartments, may be designed to assist the student in packaging or sorting various items by size or color. In addition, extraneous cues, *i.e.*, color, stencils, picture assembly, *etc.*, can accompany the job task to provide additional information for the student in completing the tasks. For example, a student may follow a picture or series of pictures in order to complete a task in the proper sequence. As the student learns the tasks, these cues can be removed so that the student is no longer dependent on them. Within the classroom, activities should approximate the actual job and the teacher should attend to quantity, quality, and performance levels of the individual students on specific jobs.

In addition to breaking down a job task into several minute steps, rate is also an important factor that should be targeted in teaching the severely handicapped to complete job tasks. Oftentimes the quality of a student's work meets or exceeds the expected quality standards, but the completion time was twice as long as a normal individual's. Piece rate is a variable that provides the margin of profit for businesses, and they are very aware of an employee's output. Therefore, not only should a teacher monitor quality of a completed task, but the completion rate of an assigned task or job should be within acceptable limits.

Personnel for Program Implementation

Program implementation requires the teacher to monitor the performance of several severely handicapped students on two or more work stations within the classroom. Since this is a difficult if not impossible task for one individual, a well-organized volunteer program can be an important part of providing the instruction, feedback, and supervision that a student needs.

An important consideration in utilizing volunteers is to insure that they have an opportunity to acquire a specific degree of competence in teaching severely handicapped persons. A quality in-service training program should be designed that will provide volunteer personnel with an understanding of elementary principles of behavior, positive reinforcement and corrective feedback, and methods for recording and monitoring student progress. A highly skilled volunteer not only increases manpower but is an asset in providing individualized, intensive training to those students who would benefit from this type of intervention. Volunteers may also know contact persons within the business community who can assist with job placement. In addition, a classroom teacher can utilize volunteers not only within the classroom, but, when permissible, volunteers can function as trainers and advocates in the community to provide on-the-job training at individual job sites.

Community-Based Vocational Training

An integral part of a secondary curriculum is the development of transitional services, such as job placement sites that will provide the students with an opportunity to apply what they have learned in the classroom in an actual work environment. The most difficult task of a teacher is to establish the initial contacts for job placement. Oftentimes community businesses are very willing to help; however, their experiences with the handicapped are limited and sometimes not very pleasant. Several people within the community may be helpful in the initial contact stage. School board members, administrators, parents, other educators, or friends may be able to assist in scheduling an appointment with interested business personnel. Also, door-to-door solicitation, in which the teacher inquires about potential job sites, is another possibility. This approach, however, is very time consuming and probably the least favored by those who develop job sites.

Once an appointment is scheduled, the teacher attends the meeting with the purpose of discussing the strengths of his or her students and their capabilities in completing specific job tasks. The conversation should address the work habits of the students and the need for work experience within the community. One must "sell" students to potential employers and guarantee that school personnel will assist in training the student on a particular job.

A successful approach that has been applied in the schools in Bucks County, Pennsylvania (Bucks County Public Schools, 1974), and will also be implemented on a modified basis in Jackson County, Oregon (1980), is the trainer-advocate model. This approach involves the use of staff members who are responsible for integrating students into the competitive job market. The teacher or staff member contacts people in business and industry who are potential employers. Trainer-advocates then "sell" students as clients to employers, stressing the research and demonstration projects which illustrate the untapped work potential of the client population.

An attraction for employers to the trainer-advocate approach is that the risk to employers hiring severely handicapped individuals has been minimized because the trainer-advocate takes full responsibility for skill and adjustment training. The trainer-advocate remains with the client on the job until specific performance criteria have been reached. During the initial stages of this approach, the teacher or staff member secures a commitment from the employer for a temporary placement. The

staff member then works on the job until its demands have been thoroughly assessed. At that point, training methods are developed and the students are trained in the work setting. Criteria for successful placement are determined by the employers. That is, the employers decide when trainers are no longer needed on the job site.

Job sites may be developed to provide temporary work experience for several students, or they may be used to monitor a student for eventual employment on a permanent basis. The purpose of the sites is negotiated between the employee and the teacher or trainer-advocate. The potential for more job sites, either within the same business or other businesses in the community, is oftentimes dependent upon the success of the first one or two placements. Therefore it is extremely important that the teacher and trainer-advocate provide as much support as possible in guaranteeing success.

Summary

Coordination of community and school-based programs is not an easy task. However, as educators we have a responsibility to involve the community in facilitating the transition of severely handicapped individuals from the classroom to the competitive labor market where they can have the opportunity to earn a remunerative wage, become less dependent on society, and expand their role as members of the community. With the cooperation and assistance from teachers, parents, community, and civic groups, severely handicapped persons can become contributing members of our society.

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14. VOCATIONAL EDUCATION FOR THE HANDICAPPED STUDENT IN SHELBY CITY SCHOOLS

by Juanita P. Burns

Miracles do happen in the Vocational Education Program for Handicapped Students in the Shelby City Schools. The program enrolls Educable Emotionally Mentally Handicapped (EMH) as well as Trainable Mentally Handicapped (TMH) students. Sprinkled liberally through the chapter are very practical examples. The author is an assistant superintendent in the Shelby City school system, Shelby, North Carolina.

Miracles happen in the vocational education program for handicapped students in the Shelby City Schools, North Carolina. By general standards the progress of students may seem small to the average person, but not to the exceptional child or the teachers. Mrs. Robin Davis, vocational teacher at the Shelby High School, recalls the excitement one of her students displayed when she finished making a skirt. The student was turning to and fro in front of a mirror and in a pleased voice said, "This skirt doesn't even look made, does it?" Mrs. Davis knew she meant "hand-made" as opposed to "ready-made" and agreed it was well-tailored. It had taken a great deal of supervision, encouragement, and help to get Sue to work in the clothing lab. Educable mentally handicapped students are often frustrated because of their poor reading skills, inability to follow directions, and / or sequence the tasks necessary in garment construction. Even though she had used many strategies to motivate and teach the necessary skills, including field trips to the department store for patterns and material, demonstrations of proper techniques, and construction of miniskirts for practice purposes, Mrs. Davis was never sure how successful the outcome would be and rejoiced with the student in her completion of the skirt.

In the Shelby City Schools the educable mentally handicapped students are mainstreamed but are scheduled for part of each day in programs especially designed for them. Using funds from Vocational Education for the Handicapped and local monies, vocational teachers who are certified to work with EMH students plan appropriate activities that will enable the students to be successful on a job or in a higher level of instruction.

While the classroom space in Mrs. Davis' room has the look of a vocational home economics lab, the activities are specifically designed to help handicapped students enter the world of work. A great deal of role playing, visual aids, games, and class discussions precede the units on food service, child care, and consumer education as well as clothing and home decorating. Mrs. Davis laughed when she told about Sally and her curtains. "I had told her to measure the windows of her room so she would know how much material to buy and had lent her my yardstick to use. The next day Sally came back without the measurements because the yardstick wasn't long enough."

"Instead of giving up on Sally, I remembered Grace Young," said Mrs. Davis. "She started at about the same place but is now working quite well at the Universal Manufacturing Company making housecoats." Universal lends one of its sewing machines to the vocational program, and interested students learn to use it. At least a dozen former EMH students are working there now. Many others are working in fast food restaurants, grocery stores, textile industries, and construction trades. The curriculum of the occupational program is geared to the types of jobs that are available in the community.

"Good communication between student and teacher is essential," says Dick Lail, who teaches junior high EMH students. "Tempers flare when frustration begins. I try to stay alert and quickly offer help before a student experiences failure, but sometimes loud, ugly language fills the room before I am aware of a problem." Mr. Lail plans general shop experiences in bricklaying, carpentry, and electrical trades for eighth- and ninth-grade EMH students so that they will be more successful in the vocational education classes at the senior high school. According to the high school teachers, the educable mentally handicapped students are fairly successful in the regular vocational classes because of the headstart they have had. They seem to work harder to keep this edge.

"I used to sleep in class," said Warren, "but this class is easier. I made a gun rack as my project and it looks pretty good." Another student is proud of his three-foot

brick wall which encloses the frame structure of a room which the carpentry group is building. "I learned to wire a single electrical switch," said Charlie, "but I have trouble with three-way switches."

Bill prefers the projects which can be worked on when regular assignments are completed. He chose to make a set of ceramic bookends and is learning that patience and careful handling are often as important as skillful hands.

The occupational program for the handicapped is coordinated with the instructional classes so that measurement, vocabulary, and other things necessary for successful hands-on experiences will be taught earlier or along with the units in the shop. "It takes a great deal of planning among the regular classroom teachers, the vocational teacher and me," said Betty Brooks, the resource teacher who works with the handicapped students in improving their math and communication skills. "Students need to know how to read their utility bills, figure miles per gallon in driving, compute the cost of credit, and read parts of the newspaper. They need instruction in functional life skills as well as the shop activities. Working together, we may help students succeed."

The vocational education program doesn't stop with the educable handicapped students but is extended to the trainable handicapped also. These students, who are functioning at a third to half of their chronological age, have many successful experiences. From the time they enter the program at age 5 until they age out at 21, they have sequential vocational training.

Mrs. Wallace, the early primary teacher, plays "house" with them, drinking imaginary tea, and ironing clothes with a cold toy iron. At the age of 13 the student in the workshop curriculum can set real tables, wash and iron real clothes, and saw real boards. Everything has a purpose. The therapy to develop motor skills, the play money, the role playing, and other communication activities plus the learning of survival words graduate into real trips to the grocery store where food is purchased by students, to real jobs of cutting grass, to washing cars and sewing with a real needle or sewing machine.

The principal at Northside Center, Gene Allen, says miracles happen every day. "A little bit is just a whole lot." One workshop is conducted as an assembly line in the production of doll beds. Students participate as they are able, whether sanding wood, hammering nails, painting or sewing tiny quilted coverlets. In another area students are working with plants in the school greenhouse and in the adjacent garden where vegetables are planted and harvested.

Teacher Janice Elmore guides fingers of handicapped children as they plant cuttings in pots. "It adds joy to their lives as they see things grow." One student now works in a local greenhouse on a part-time basis and according to the vocational rehabilitation counselor is doing a satisfactory job.

Mrs. Elmore, who often takes students to pick beans, rake leaves, pick up behind builders and many other outdoor jobs, says, "At first the students didn't want to leave the school, but that has changed completely now, especially when they get paid a little for their work." When they went to the bank to get their checks cashed, one student refused a five dollar bill because another student had three ones. "I worked harder and longer," he said. "Why do I get just one?"

The workshop area includes a kitchen where children learn to operate appliances and work with various utensils. Teacher Carolyn Butler says there is never a dull moment in this area. You may find eggs in the freezer rather than the refrigerator and scorched places on cloth being ironed, but students do learn to cook and serve simple food, to wash and iron clothes, and to sweep and dust.

The vocational rehabilitation counselor reports that he has been able to place several TMH students in jobs in the community and others in sheltered workshop contract jobs. While he has been more successful securing jobs for the EMH students than the TMR students, he says, "It continues to amaze me that students who have less going for them accomplish so much."

15. THE LARAMIE WORK-EXPERIENCE PROGRAM

by Peny G. Kayser

This chapter is a report on the ingredients of a successful program. The author is a Work-Experience Coordinator at Laramie Junior High School, Laramie, Wyoming.

Laramie Junior High School has a new program this year called the Work-Experience Program. It is the first of its kind in this part of the country and closely resembles the Wisconsin Work Experience and Career Exploration Program. The project goals are as follows:

1. Develop and offer a curriculum for disadvantaged students which has occupational relevancy.
   A. Students are educationally disadvantaged according to the definition stated in the Federal Register, 1970, which reads as follows:

      Disadvantaged persons—persons who have academic, socioeconomic, cultural, or other handicaps that prevent them from succeeding in vocational, educational, or consumer and homemaking programs designed for persons without such disadvantages, and who for that reason require specially designed educational programs or related services. The term includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large, but does not include physically or mentally handicapped persons unless such persons also suffer from disadvantagements described in this paragraph.

2. Assist disadvantaged students in improving school performance.
3. Conduct employment counseling for disadvantaged students who have the need.
4. Help disadvantaged students stay in school and have successful experiences.
5. Conduct parent counseling sessions to help parents help their children.
6. Develop an individualized Prescribed Plan for each student in the program.

The Laramie Junior High Program accepts any student, 7th to 9th grade, who is at least 14 years of age and determined to be a potential dropout by our counseling staff.

The schedule for the students is set up for one-half day of school and one-half day of work. The work provides the incentive for the students to stay in school and also allows them the opportunity for success in school dealing with four or five classes vs. eight. Due to the age of the students they are transported to their job sites and returned to the school in time for them to catch the bus.

One of the classes each student is required to take is the work-experience class. This class is scheduled at the beginning of the day, providing an opportunity for the students to smooth out, get organized, learn about study habits and employment skills, and approach the rest of their day in a positive way.

The curriculum for the work-experience class is as follows:

A. Applying for a Job
   Goals: To learn how to apply for a job and fill out application forms.
   Activities:
   1. Complete a number of application forms correctly.
   2. Complete a personal statistics card to carry at all times as a help to correctly answering questions on application forms.
   3. Discuss handwriting, using black ink, being neat and legible and taking application forms seriously.
   4. Take field trips to local personnel offices to listen to personnel directors explain procedure regarding applications and interviews.
   5. Have guest speakers from local Job Service office as well as business speakers regarding the value of proper application for employment.

B. Personal Appearance

Goals: To make the best personal appearance that you possibly can.

Activities:

1. Hold discussions about hair, face, teeth, hands, clothes, shoes, and body. Relate each of these to what the student is currently trying to achieve in his/her classes and work sites.
2. Discuss home environment, attitudes and personal responsibility regarding hygiene.

C. School Survival

Goals: To stay in school with as much success and as little aggravation as possible.

Activities:

1. Invite the vice-principal to discuss the school handbook so everyone knows what is expected and what the consequences of student behaviors are.
2. Hold class discussions regarding past school experiences and current attitudes toward school. Discuss ways of helping those attitudes become more positive.
3. Share positive experiences with teachers and parents in order to establish a mood of school positive vs. school negative.
4. Use speakers from the community to help the students establish that school is relative to them, right now, and a more positive lifestyle.
5. Use related activities such as obtaining a driver's license or filling in an income tax form to show how school is of value in a person's life.
6. Physical education classes have been a problem for many of the work-experience students, therefore, a weight-lifting, exercise, jogging program has been instituted on Mondays and Wednesdays with personal desire being the motivating factor rather than specific requirements by the teacher.

D. Employability

Goals: Find jobs for each student in an area as close to his/her interests as possible.

Activities:

1. Review requirements for various types of jobs.
2. Determine students' interests regarding working.
3. Contact Job Service and inquire regarding jobs available for students 14-16 years of age.
4. Contact business people in the community regarding jobs for students.
5. Review the process for obtaining work permits with students and get all forms in order.

E. Attitudes

Goals: Develop an atmosphere, in the classroom, where students can express their attitudes and begin to learn if they are appropriate for school and/or work situations in our society.

Activities:

1. Use the Transition Units as teaching tools. These units include:
   a. Transition 1. Communication and Problem-Solving Skills includes 22 activities that encourage students to listen carefully to others and to express themselves. Small-group discussions also promote an inductive approach to problem solving.
   b. Transition 2. Encouraging Openness and Trust includes 20 activities that encourage students to be forthright and trusting with others and to be receptive to new experiences.
   c. Transition 3. Verbal and Nonverbal Communication of Feelings includes 18 activities that explore different forms of communication and consider the ways feelings can influence behavior.
   d. Transition 4. Needs, Goals, and Expectations includes 14 activities that clarify human motivations as students consider what people commonly need, work toward, and expect of their lives.
   e. Transition 5. Increasing Awareness of Values includes 17 activities that show how values influence choices and actions.

Cooperation with other agencies is an important part of our program. A through F indicate how we have gone about doing so.

A. Joe Mathis, CETA coordinator for Job Service of Wyoming, has been an integral part of the work-experience program and its success. Nine of the job sites currently being used are CETA-funded.

B. The University of Wyoming has been cooperative in every way asked and is also currently providing the program with two job sites.

C. Clint Black, D-PASS Probation Officer, has been very generous in his praise of the program and the success of one of his clients. The entire D-PASS staff has fully cooperated whenever asked.

D. The employers in this community have been very cooperative and are providing not only job sites but educational and growth experiences for all of the work-experience students.

E. Family Planning of Albany County is planning an educational program which will be added to our curriculum this semester.

F. No agency or private business has been anything but helpful to the program.

Currently there are fourteen students who are active in the program with three more students being counseled through the program.

The students' attendance at school has improved about 75 percent over their attendance before entering the program. Much of the incentive for coming to school is the work-experiences the students are having.

They are employed in the following types of jobs:

Gas station attendant
Energy Department, University of Wyoming-Clerical
Crane Cafeteria, University of Wyoming-Line worker
Albany County Courthouse—Janitorial
Albany County Senior Citizens Center-Kitchen help
Community Day Care Center-Child care worker
St. Mathews Day Care Center-Child care worker
Laramie Junior High School Lunch Room-General worker
Diamond Horseshoe-Dishwasher
Animal Care Shelter-General worker
A & W Rootbeer Fast Foods-Fast food worker

The students have all experienced positive work placements and the employers have been very cooperative.

At this time about half of our job sites are funded privately and half through CETA and the Wyoming Job Service.

I am pleased with our program, realizing that as with any new program, learning experiences take place every day with both the students and myself. Having a driver to transport the students has been a blessing and has allowed me more time to improve the program and for family counseling. All of the families have been cooperative and happy to be of assistance.

Trying and failing, trying and succeeding, that's the action, and the successes are outweighing the failures by far.

16. INDUSTRIAL ARTS AND VOCATIONAL EDUCATION FOR THE MENTALLY RETARDED: THE LINE PRODUCTION

by Michael Bender

In adapting the line production method for use with mentally retarded students, the author reemphasizes the need for student involvement and hands-on-experience at all levels of vocational instruction. Michael Bender is Director of Special Education at the John F. Kennedy Institute for the Handicapped Child, Johns Hopkins University.

Curriculum development for the moderately and severely retarded student has traditionally focused upon teaching self-care and socialization skills. In many instances fine and gross motor activities, the use of communication devices, and functional academics have also been integrated into curricula for these students. While all these teaching areas are of critical importance, a major concern of the parents is that their children are not always taught the work skills they will need to be successful in society. Too often handicapped students progress through a range of academic educational levels only to have their education program conclude before many crucial work skills have been taught.

A successful approach to teaching work skills has gone under a myriad of names, including "mass production," "working on an assembly line," and most recently the "line production." The line production method offers many advantages when utilized as part of a total curriculum, and its objectives and activities can be implemented in or out of an industrial arts setting. The method involves using various forms of media (paper, wood, paint) to help achieve its goals. The abilities to work with concrete materials, perform functional motor tasks, and develop good work habits are unique characteristics of this method. The process results in a finished article, which provides reinforcement and a sense of accomplishment for student as well as parent.

Definition

Line production is a joint endeavor accomplished through an organization of individuals. The students are seated near each other (put on a "line") where each works on one part of a project and then passes it to the next student. The students' actions, emotions, and interactions are observed and form the basis of their evaluations.

Implementation

In implementing a line production for the moderately retarded it is advisable first to discuss with the students the importance of working with others.

You might want to develop their interest by discussing the occupations of the students' parents or someone they know on their level of comprehension. It is also advisable to take a field trip to observe a line production or visit a sheltered workshop where the students can preview the type of process they will be undertaking. Areas of emphasis during these trips should include socially acceptable behavior, work habits, and cooperative work efforts.

Before implementing the line production it is always advisable to conduct a "dry run." This should occur after a task analysis, step-by-step breakdown, of the item has been performed in addition to a cost analysis. It is important to remember that a project with too many steps may be confusing and should be avoided. This is especially true of the student who needs continual reinforcement.

Motivation

Student motivation is critical if the line production is to be successful. It is suggested that you show the students a variety of completed line-production projects and encourage a discussion of how they might have been made. The projects you suggest should be carefully researched for feasibility in terms of the population with which you are working and its ability to be completed in a specific length of time. Many moderately handicapped students may want to sell their finished project, so it is important to select a project which is marketable. The profit motive has long been an incentive for all levels and ages of nonhandicapped as well as handicapped students. It is extremely important that all students be reminded that they will be able to take home a finished project; in this way, you provide an incentive for continuing to work on the line. (See Figure 1.)

Child Development

There are many skill and behavioral areas which may be developed and taught as a result of participating in a line production. For example, students will be able to develop realistic work habits as they interact with peers,

Motivation Considerations

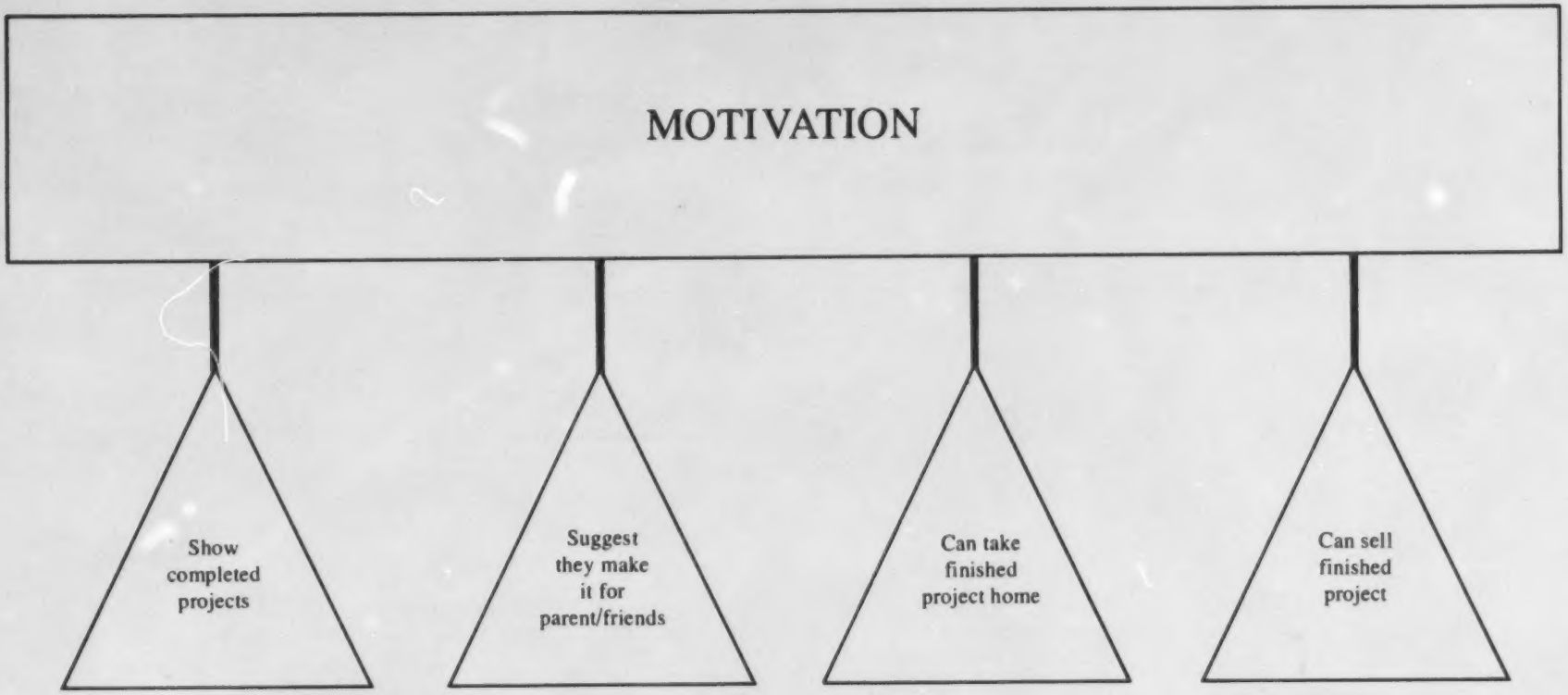


FIGURE 1

as well as being provided an opportunity to learn safety practices, accept criticism, and work within time limits. Additionally, dependent upon the project, there will be an exposure to a variety of media, materials, and tools as the students develop important prerequisite work skills. The ability to be a member of a work team, in addition to receiving social acceptance and praise, makes the line production self-reinforcing and an area often not addressed by traditional curricula.

Project Criteria

The following list offers possible criteria for project selection. It is important that these criteria be strictly adhered to if the line production is to be conducted successfully. This list includes:

1. Select inexpensive materials.
2. The project should lend itself to a breakdown of parts and a task-analysis approach.
3. The project should require jigs and fixtures (templates and holding devices).
4. The project should have some commercial appeal and definitely have student appeal.
5. The production time should be geared to the size and abilities of the class
6. The project should have the ability to be stored until completed.

Class Organization

The line production can incorporate as few as three or four students or be expanded to include a large number. Initially it is suggested that the line be set up as pictured in Figure 2. At a later time additional students, such as a quality control person and a public relations person, may be added. Wages may be paid if the production results in a marketable item.

The role of the supervisor is to oversee the line production and to help out whenever "bottlenecks" occur. The supervisor is ultimately responsible, under supervision of the teacher, for making sure that the line runs smoothly. The safety person continually monitors the progress of the project and is continually checking that tools and materials are being used safely. The quality control person not only checks the finished project to make sure it has been built according to plans or specifications, but will check at intervals along the line to make sure that each worker is performing his or her job accurately. The public relations position should be a rotating job which allows for each student to explain the project to people who are visiting the class. The supply person provides the materials and tools and is continually checking to make sure that no specific phase of the project runs out of materials. This person's responsibilities also include having materials continually available and arranging for any special tools that might be required for the day's work, replacing broken tools or those requiring adjustment, and supplying appropriate jigs and fixtures to the line when they are necessary.

An example of a simple line-production lesson is outlined below.

Line Production (example)

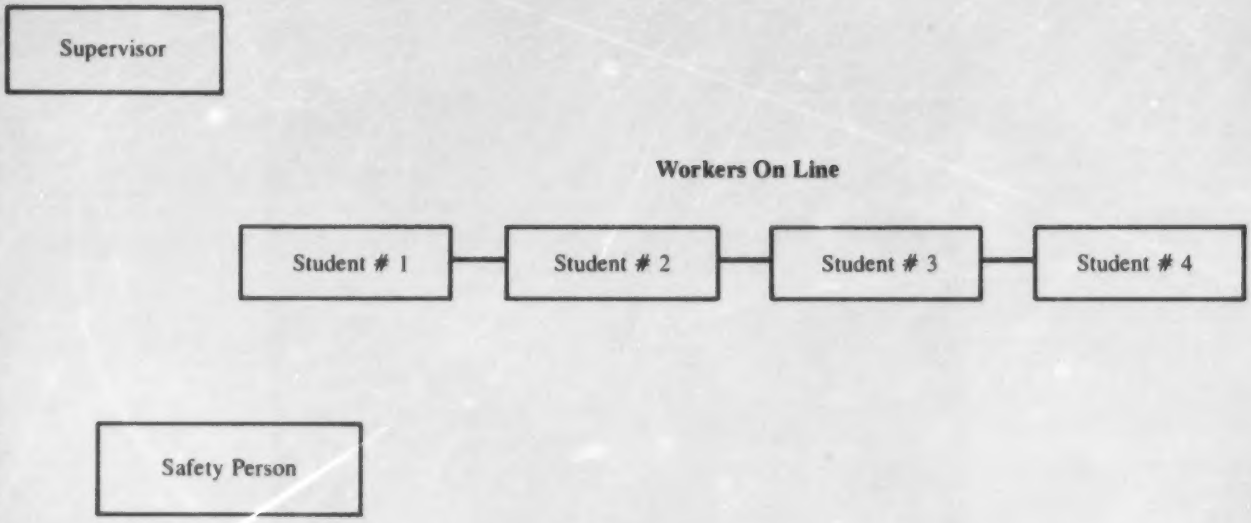
Pencil or Crayon Holder

Materials Required:	Small or medium size cardboard juice containers (such as those obtained from frozen juices), white glue, paper or burlap, scissors, artist brushes, and rubber bands.
Arrangement:	A long table, series of desks, or workbenches, arranged in a long line.
Procedure:	The line can be set up in many ways depending upon the abilities of the children involved. One or two students can work at the same job.

Suggested Work Stations

Station 1:	Student obtains required colored paper or burlap and places a template (cardboard or wooden) over paper. The student outlines it and cuts to size with scissor. Christmas paper is very attractive for a seasonal project. The teacher should determine if the child at this station is capable of using scissors. This activity is especially good for promoting finger dexterity and eye-hand coordination. Students then pass the completed job to station 3 *and repeat this activity.*
Station 2:	Student completely paints container with white glue. The student then smooths out the glue with a finger or stick and passes it to station 3. And then repeats this activity.
Station 3:	Student wraps paper around container with glue making sure glue is evenly spread under paper. The student may want to roll container between hands. And then passes it to final station 4.
Station 4:	Last student on line places 3 rubber bands around each container and sets them aside to dry.

Line Production Organization



Additional workers could include:

1. Safety Person
2. Quality Control Person
3. Public Relations Person

FIGURE 2

Expanding the Line: The line can be expanded in many ways. The easiest way is to create more work stations such as including a station for packaging the product. In this case, the pencil holder may be placed in a plastic bag and tied with a metal tie. The line can also be expanded by choosing a product which requires more steps for its completion.

Role of Supervisor: The basic role of the supervisor is to make sure the materials pass from one station to the next. In case of tie-ups the teacher and supervisor should be aware of which students should have their positions changed in order to keep the line flowing. (Industrial titles may also be used depending upon the level of the class. Name tags or nameplates usually add incentive for success on the line.)

17. SPECIAL EDUCATION—CAREER VOCATIONAL PROGRAM

by Bernice Luskin

This Westport, Connecticut, Career/Vocational program described here combines instruction with structured on-the-job training for preparing special education students for the world of work. The author is the Special Education Career/Vocational Program Director, Staples High School, Westport, Connecticut.

The Westport Special Education Career/Vocational Program is a sequential, structured, closely supervised career/vocational program designed to partially meet the needs of handicapped students in a regional facility. Basic to the program's philosophy is that special education students learn best through hands-on experiences. Therefore, we have designed introductory vocational programs in school units that involve learning by doing. As students are able, they move into the community where they continue to explore job interests and develop job skills.

A prime goal of the program is to prepare special education students for the world of work. Whenever possible, each student graduates with a realistic self-appraisal, entry-level skills and the ability to obtain and hold a job.

Vocational education is part of the regualr special-education curriculum. It is the responsibility of a group of special education teachers who devote all their time to the vocational components discussed in this chapter. Decisions as to when and where to begin a student's hands-on experiences are made at IEP meetings where parents, teaching staff, and appropriate support personnel can share in program planning.

Students begin in sixth grade with in-school prevocational units. These units are:

Metals: This is an introduction to basic metal tools and simple mass production techniques. Students complete a project such as plant holders or candlesticks.

Video Taping: Students learn how to use video taping equipment, plan and execute a series of job interviews.

Graphic Arts: Students are introduced to offset-printing techniques. They are then able to print school stationery and forms as well as execute orders for staff members. The latter provides some students with the opportunity to learn basic business procedures.

Food Services: The school cafeteria serves as a training site for simple food preparation, clean-up activities, and the more complicated operation of a sandwich bar.

At fourteen, students for whom it is appropriate can move into one of two community-based programs. These occur during the school day with teacher supervision and school transportation provided. A Retirement Home provides job experiences in outdoor ground maintenance, food services, health care, occupational therapy, and nursery school. In addition to the job training in a structured, caring environment, the interaction between residents and students has helped students mature. The Internship program provides students with two-hour sessions in the community at five different job placements every week during the school year. Staff has found the community cooperative and able to provide excellent hands-on experiences for students. A student in the Internship program attends a community placement twice a week, two hours each session. After approximately fifteen sessions at one placement she or he moves on to a new placement. During the year a student will have five different placements.

At the high school level, during the past eight years, a variety of Units have been developed. These include Teacher Aide, Fire, Automotive, Greenhouse, Housekeeping, Nursing Home and Clerical. The operation of specific units depends on:

1. student interest
2. availability of training sites
3. availability of staff.

For example, the Automotive Unit, involves the renting of a local garage for a three-hour block, once a week. A garage mechanic and special education teacher team teach the weekly session. Students first learn front station service. When they know how to pump gas, check

oil, use a credit card machine, make change and keep the station clean, they are helped in locating a part-time job in a service station. Weekly work sessions at the local garage continue. They learn about all the systems of a car so they can understand simple customer questions and refer them properly. Students also have the opportunity to assist the mechanic in maintenance and repair work.

All units have a basic design that includes:

1. prejob, hands-on, community-based training
2. careful job placement
3. ongoing problem-solving workshops
4. skill development workshops
5. conferences with supervisors and parents.

High school students can elect community internships that focus on vocational strengths and interests. They receive school credit for these internships that is based on hours spent on the internship.

The final step in the vocational program is a paid job. Students who are employed are enrolled in a Special Education Work Study Program. They attend weekly workshops where they sharpen the general skills needed on every job and receive assistance with any problems that may crop up on their job.

The developmental, hands-on, community-based, special-education vocational program described has been partially funded by Title III and Title IV Grants. An illustrated booklet, with additional program information can be obtained by writing the author. Inquiries should be addressed to Bernice Luskin, Westport Special Education Career/Vocational Program, Staples High School, Westport, Connecticut 06880.

18. TEACHING TECHNIQUES FOR MAINSTREAMING HANDICAPPED STUDENTS IN VOCATIONAL CLASSES

by M. Quigley Marrae and Bobbie Porter Turner

This chapter describes the various handicapping conditions that vocational educators are likely to encounter, and provides numerous suggestions for dealing with the different types of students. The authors teach in the Montgomery County (Maryland) Public Schools.

"Let us ask what we want for our children. Then let us not ask less for all children." (Preamble Report to the President, White House Conference of Children, 1979)

Now that P.L. 94-142 has mandated mainstreaming students and delivery of appropriate services, many vocational teachers are requesting information about handicapping conditions and how to deal effectively with specific problems in the classroom and laboratory.

In any effort to provide information about handicapping conditions, two problems become immediately apparent. One is that labels have often represented the greatest handicap of all due to stereotyping. One stereotype, and perhaps the most dehumanizing of all, is the attitude that reduces all handicapping conditions to the status of an "illness." Attitudinal barriers are often the most difficult to overcome and represent the next great civil rights struggle in our country, according to Guildman and Roth in their new book *The Unexpected Minority* (reviewed in the *Washington Post*, March, 1980). This barrier has reduced the handicapped people to second-class citizenship and effectively barred them from social freedom and job opportunities.

Many handicapped persons resent labels and rightly so, but the reality is that if we do not allow stereotypes to limit our thinking, we may provide useful information regarding specific handicaps. This presents the second problem, providing information to vocational teachers in such a way that it will offer useful help. Further, the information should not foster additional barriers by offering material that could be skewed to provide reasons to deny access to certain programs not usually thought of as suitable for particular disabilities. This should not be allowed to occur. We must not make assumptions as to what handicapped individuals may accomplish. But rather realize that, with determination, program and equipment modification, and supportive services, many handicapped people can reach their vocational goals.

Educators should be cautioned to put assumptions aside and allow the handicapped person to reach his or her full potential. Do not assume the blind person cannot type or work on computers. They can, and some have done so without modifications to the equipment. There are many similar examples that apply to all handicaps. Try the following exercise to check your attitudes and stereotypical thinking.

Exercise to Pinpoint Stereotypical Attitudes

Stereotyped Characteristics Assigned Handicapped Persons	*Questions to Ask Yourself*
1. Emotionally Immature	When was the last time I slammed a door in anger?
2. Undependable	When was the last time I was late to or forgot a meeting?
3. Delay of Gratification	When was the last time I bought on credit?
4. Slow	When was the last time I said, "I don't understand?"

(Beane and Zachmanoglow, "Career Education for the Handicapped: A Psychosocial Impact." *Vocational Guidance Quarterly* 28, no.1, September. 1979.)

Independence is important to the self-esteem of the handicapped person and should be encouraged. Most handicapped people do not appreciate unnecessary help or special favors. Statements such as "I don't consider myself handicapped" and "I just do things a different way" are sincere and should be believed (Ian McNett). The fact remains, and should be addressed, that vocational teachers and others want and need explanations and techniques to use for effective delivery of services to each person according to handicap.

Many people prefer the use of the term *exceptional person* (which then can be expanded to include the gifted and talented student and the disadvantaged). The term *handicapped* has been defined in P.L. 94-142 (Federal Register April 7, 1977) as follows:

A) A person who is:
1. mentally retarded,
2. hard of hearing,
3. deaf,
4. speech impaired,
5. visually handicapped,
6. seriously emotionally disturbed,
7. crippled (orthopedically impaired),
8. other health impaired, including learning disabilites to the extent the disability is a health impairment; and

B) Who by reason of the above:
1. requires special education and related services, and
2. cannot succeed in the regular vocational education program without special assistance; or
3. requires a modified vocational educational program.

Some general techniques for the vocational teacher are to seek out and use the services of special education staff, aides, tutors, interpreters, volunteers, and other students. Ask the handicapped person to provide specific methods for managing his or her handicap. Invaluable suggestions for modification of equipment or classes may be obtained by getting input from the handicapped person.

Individual learning packets, discussion periods, minicourses for single skill development, cultural/language modifications to curriculum may all be utilized as appropriate; shorten or lengthen class time. Audiovisual aids can prove invaluable. Counseling and guidance for the student and family may be required; job placement and followup may be neded for some students. Use of counselors and Department of Vocational Rehabilitation personnel and other staff can be called on to help provide many of these services.

It should be noted that under the general category of "other health impaired" there is a wide spectrum of disabilities or handicaps. Included could be the gifted handicapped with their own highly special needs, alcoholics, extreme obesity, cerebral palsy, or epilepsy. This group represents some very special problems requiring innovative and creative solutions.

Orthopedically Impaired

Special needs are highly diverse and individualized to each student. Remember, intelligence is not related to physical disability. Some ways to help the physically disabled according to needs are: use a typewriter for persons who can't write, be sure all facilities allow for passage of a wheelchair, check doors, lavatories, drinking fountains, aisles. Ramps are important. Reaching, grasping, and moving can all be aided with special tools such as tongs, extended handles with hooks or gripping devices. Handrails, braces, and other devices are useful. Many homemade modifications are ingenious. Physical therapists, rehabilitation counselors, special-needs teachers are invaluable sources for advice on specific modifications. Often, industrial arts teachers can provide help by designing and creating special apparatus when needs have been assessed. Remove anything blocking access to equipment or movement. In some cases, controls can be raised or lowered and modified in other ways.

Learning Disabled

Many of the same techniques used for hearing impaired or visually impaired will be appropriate for the LD student. Problems are auditory and/or visual in nature and do not signify a lack of intelligence or maturity. A learning disabled person may be extremely intelligent, but unable to read because of visual problems. Deletions of words or letters and reversals of letters and words may cause the difficulty with reading. Taped material or oral instruction is helpful to this person; simultaneous presentation methods are useful. Information regarding each individual's specific problems will be needed before successful planning can occur. Don't forget to ask the students what they need and what problems they are experiencing with particular presentations. This person may require testing with specific assessment instruments to determine the extent and nature of the problems.

Mildly Mentally Retarded

Mildly mentally retarded students do not differ greatly from so-called normal students but often react to frustrations stemming from the expectations of society that are difficult to meet. Intelligence scores are usually rated between 50 and 80. This student may take longer to learn but can be successful with support help. Maturity level may lag behind the age group, as well. Self-image may present a problem and social problems may plague this student.

Class activities should be structured to allow for shorter attention span and materials should be structured to provide for success experiences. Lessons and directions should be detailed and presented in small enough steps to allow for understanding. Use repetition and practice as often as possible and recheck at scheduled intervals for retention of information. Be certain the students know all that is needed to complete assignments and expect com-

petent work, at a slower pace. Talk to them on their level and within their own cultural frameworks to aid understanding.

Emotionally Handicapped

Emotionally handicapped students are often hard to describe because of the wide variety of forms their handicap takes. Inappropriate behavior exhibited frequently and with a more unusual intensity than that observed in the peer group are descriptors. Obsessions, excessive hostility, irrational fears, and lack of control are all examples of emotional problems.

This person usually has a very low frustration level and benefits from a calm environment as free from distractions as possible. Consistent and routine experiences should be provided. Keep structure in lessons and use a sequenced step approach with small amounts of information given at any one time. Use praise and provide for success experiences. Explain objectives for all tasks to the students. Be sure the students understand what you consider appropriate behavior. Try to provide as much work space as possible so that distractions from peers are minimized.

Visually Impaired

The legally blind has 20/200 or less vision. Other problems include restricted loss of peripheral vision, lack of clarity of vision, inability to distinguish one or more colors, "color-blindness."

Learn how the person manages the problem to determine the type and amount of assistance needed. Many of the visually impaired have devised innovative ways of coping and like other handicapped, do not enjoy being given help they don't need.

Some general procedures that may be useful when working with the visually impaired are: show the student where things are in the classrooms and labs (don't be afraid to say "see" and "look"), pair the student with a peer when necessary, and be sure work areas are well-lighted and light is even and glare-free. Adjustable chairs, tables, desks help the person get comfortably close to the work. Print may need to be enlarged.Simplified instruction and tape recorders can be used, as well as oral instruction and testing. Use key words and word lists. Check equipment to see if extra safety guards are needed. Buzzers, bells, *etc.*, are good warning devices.

Tasks should be presented step-by-step in a logical manner. Expect competent work although more time may be needed to complete tasks. Use encouragement and praise for achievement. Use simultaneous presentation methods. Determine the learning mode, auditory, visual, or kinesthetic, and present lessons and tasks to accommodate it. Large print and braille materials can be helpful.

Hearing Impaired

Hearing loss ranges from mild to severe. The person with a 60-80 decible range loss is defined legally deaf, other degrees of loss are labeled hard-of-hearing.

Many hearing impaired speak extremely well, some use lipreading or sign language or a combination of methods. Lipreading is an inexact art because many words look the same on the lips; it is an aid but not the total answer for the hearing impaired. It is very important to realize that the deaf and hearing impaired exhibit a broad range of intelligence, and IQ is not an indication of how well the user will use oral language.

Do not place this student in a glaring light or facing a bright light. Avoid standing with your face overly illuminated or partially shadowed or covered when speaking to the hearing impaired. Speech should not be exaggerated or overly loud. This only embarrasses the student and may make understanding more difficult. Talk at a moderate pace, speak clearly. Be sure you are understood. Often students may act as if they understand when they don't. Use pictures, diagrams, gestures to aid in communication.

Try to avoid excess noise in the room. Place the student in a centrally located area so the hearing aid, if one is used, can pick up the sound surrounding the student more evenly. Flashing lights are good safety features for equipment. Note takers may be helpful and some students may require an interpreter (refer to P.L. 94-142). Use vocabulary words as often as possible, organize material, restate facts and directions and use key points. Write important information given orally over intercom speakers or by others. Sound amplification devices perhaps with earphones can be very useful in some cases.

Cooperation is the key to the successful programs for the handicapped - interdepartmental (local level), interagency (state and federal level). Of utmost importance is teacher cooperation and attitudes. Without this vital ingredient, success may be nearly impossible.

Vocational educators have a tremendous opportunity to assist students and to improve their own accountability by accommodating the mainstreamed student with compassion and creative effort. Teachers who make the effort to provide a good delivery of services have a vehicle for showing that their teaching skills make a difference.

Teachers who approach this task with creativity and enthusiasm will make a difference. There is help for these efforts via special classes, in-service courses, professional organizations, special interest groups, and other educators.

The big payoff to society will be reflected in the greater job and lifestyle satisfaction of handicapped students rather than dependency on social programs paid out of tax dollars. This will be an investment in productive lives versus waste of human potential.

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10. Sidney Marland, *Career Education* (New York: McGraw-Hill Company, 1973).

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APPENDICES

APPENDIX A

UNITED NATIONS RESOLUTION ON INTERNATIONAL YEAR OF DISABLED PERSONS

34/154. *International Year of Disabled Persons*

Date: 17 December 1979
Adopted without a vote

Meeting: 105
Report: A/34/782

The General Assembly,

Recalling its resolution 31/123 of 16 December 1976, by which it proclaimed the year *1981* International Year of Disabled Persons,

Recalling also its resolutions 32/133 of 16 December 1977, by which it established the Advisory Committee for the International Year of Disabled Persons, and 33/170 of 20 December 1978,

Recognizing that the International Year of Disabled Persons should promote the realization of the right of disabled persons to participate fully in the social life and development of the societies in which they live and their enjoyment of living conditions equal to those of other citizens, as well as an equal share in the improvements in living condtions resulting from social and economic development,

Recognizing also that the International Year of Disabled Persons should enhance the contributions disabled persons can make as full members of the society,

Acknowledging that disability should be viewed as a relationship between an individual and his or her environment,

Convinced that the International Year of the Disabled should result in societies responding more fully to the special difficulties which disabled persons may encounter in developing their human potential,

Convinced also that, since a large number of disabled persons are victims of war and other forms of violence, the International Year of Disabled Persons could be appropriately used as an occasion to emphasize the need for continued and reinforced co-operation among nations for world peace,

Stressing the importance of following up the activities of the International Year of Disabled Persons through a long-term programme of action,

Noting that the Secretary-General will appoint an Executive Secretary for the Year,[62]

Noting also the relevant parts of the report on the world social situation...[63]

[62] A/34/158/Add.1.
[63] E/CN.5/557/Add.2.

LEARNING TO SPEAK THE LANGUAGE*

Like many professions, teaching and education contain many specialized acronyms, terms, and phrases which are used as a form of professional shorthand. Sometimes they get confusing. Many regular classroom teachers, if they haven't already, will soon be receiving mainstreamed special education students. You should begin now to familiarize yourself with the "language" used in special ed. As a service to PSEA members everywhere, Voice is publishing this selected list to help you meet the challenge of the future:

- LEA—Local educational agency. Any intermediate unit, public school district, or private school operating approved programs and services for the education of exceptional persons.

- Appropriate Program—A program of education and/or training for exceptional school-aged persons which meets their individual needs as agreed to by a parent, school district, and/or intermediate unit personnel; or as ordered by a hearing office; or upon appeal as ordered by the Secretary of Education.

- Exceptional Persons—Persons of school-age who deviate from the average in physical, mental, emotional, or social characteristics to such an extent that they require special educational programs, faculties, or services and shall include all school-aged persons in detention homes and state schools and hospitals.

- IEP—Individualized education program. The Pennsylvania Special Education Standards, which reflect both State Board Regulations and federal legislation, require an IEP for each exceptional student identified as needing special education and/or related services. This requirement extends to all exceptional students in Pennsylvania, in public and approved private school. The local education agency is responsible for insuring that the IEP is accessible only to the student, parent, guardian, or surrogate parent or those persons directly responsible for implementing the plan. IEPs are subject to regulations governing confidentiality.

- Related Services—As defined in law, "related services" means transportation and such developmental, corrective, and other supportive services that may be required to assist a handicapped student to benefit from special education. (i.e., occupational and physical therapy, counseling services, social work services, recreation).

- LRE—Least restrictive environment. The placement that will optimize the student's educational and social growth and is as close as possible to the mainstream of education. Programs outside the regular classroom environment are to be provided only when the nature or extent of the exceptionality is such that support aids and services on the regular program cannot provide satisfactory education.

- Due Process Notice—Written notice of recommended assignment given or sent by certified mail to the parent, guardian, surrogate parent, or student (when appropriate).

- Surrogate Parent—A person appointed by the intermediate unit to act as the parent of a school-aged person when the parents are not known or unavailable or when the school-aged person is a ward of the state.

- Pre-hearing Conference—Upon conclusion of the IEP planning conference, if the parents are dissatisfied with the results of the conference, they may request a pre-hearing conference to resolve questions or concerns.

*Reprinted with permission of *Voice* and the Pennsylvania State Education Association. *Voice*, October 22, 1979.

This would constitute an additional attempt to come to agreement before going to a hearing.

- HI—Hearing impaired. A hearing loss ranging from mild (hard of hearing) to profound (deaf).

- LD—Learning disability. A deficiency in the acquisition of basic learning skills, including but not limited to, the ability to reason, think, read, write, spell, or do mathematical calculations, as identified by an educational and psychological evaluation.

- Mentally Gifted—Outstanding intellectual and creative ability, the development of which requires special activities or services not ordinarily provided in the regular program. I.Q. 130 or higher. A limited number of persons with I.Q. scores higher than 130 may be admitted to gifted programs when other educational criteria strongly indicate gifted ability.

- EMR—Educable mentally retarded with I.Q. lower than 80.

- TMR—Trainable mentally retarded with I.Q. lower than 55.

- S&PMR—Severely and profoundly mentally retarded.

- Physically Handicapped—Orthopedic or other health impairments of sufficient magnitude to limit classroom accommodation and educational performance of a person.

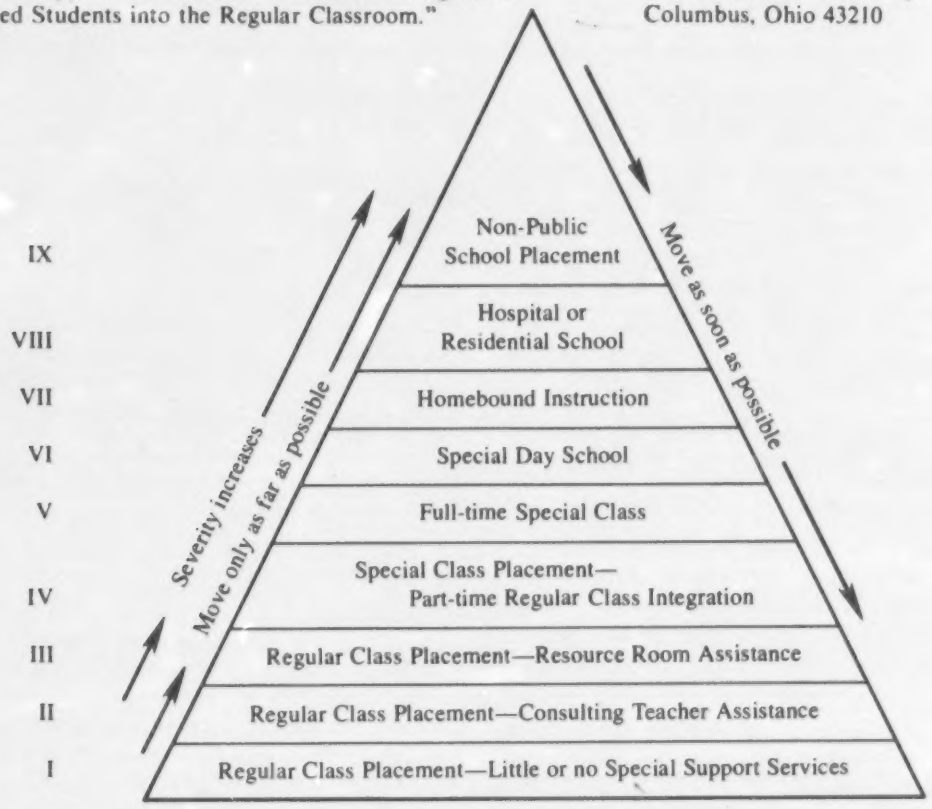
- SP&L—Speech and language impaired. Communication disorders of impaired language, voice, fluency, or articulation.

- SED—Socially and emotionally disturbed. A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree: an inability to learn which cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behaviors or feelings; a general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms, pains, or fears associated with personal or school problems.

APPENDIX B

This pyramid illustrates how some of the decision-making occurs and why some children are mainstreamed and others are placed in other schools and institutions. This pyramid appeared in the booklet "Mainstreaming Handicapped Students into the Regular Classroom."

Booklet available from
The National Center for Research
in Vocational Education
The Ohio State University
Columbus, Ohio 43210



Continuum of Instructional Arrangements Available to Public School Handicapped Children

Mainstreaming—Levels I, II, III, IV

Resource Room, Consulting Teacher, Itinerant Services to Regular Class—Levels I, II, III

Special Class in district—Levels IV, V

Outside temporary placement with options for movement to lower levels—Levels VI, VII, VIII
(Services by Public School)

"In-Patient" program—Level IX

Adapted from M. C. Reynolds "A Framework for Considering Some Issues in Special Education," in March, 1962 issue of *Exceptional Children*.

APPENDIX C

ONE HUNDRED JOBS

Mentally retarded people are performing hundreds of kinds of jobs in America. The following list only touches the surface...

Stock clerk
Dishwasher
Vegetable peeler
Landscape laborer
Elevator operator
Concession attendant
Sewing machine operator
Housemaid
Sales clerk
Mail handler
Farmhand
Assembly worker
Supermarket checkout clerk
Factory worker
Seamstress
Kick press operator
Truck loader
Baker's helper
Playground attendant
Clerk-typist
Egg collector
Freight handler
Mimeograph operator
Mother's helper
Painter's helper
Laboratory helper
Apple picker
Upholsterer
Bus boy
Bus girl
Kitchen helper
Unskilled laborer
Candy wrapper
Tile setter
Wrapper
Tree pruner
Messenger, outdoor
Office boy
Office girl
Porter
Packer
Truck helper
Laundry worker
Gas station attendant
ironer
Saw machine operator
Bootblack
Usher
Animal caretaker
Laborer, crops
Collator
Railroad track worker
Mangle machine operator
Bottle washer
Nurse's aide
Wallpaperer
Photocopy machine operator
Housekeeper
Ward attendant
Office cleaner
Mechanic's helper
Brass polisher
Waitress
Food handler
Groundsman
Textile machine worker
Fish cleaner
Bookbinding worker
Bottle filler
Parking lot attendant
Messenger,indoor
Office clerk
Janitor
Sorter
Garbage collector
Carpenter's helper
Mail carrier
Drillpress operator
Maid, hotel
Car washer
Ticket taker
Manicurist
Warehouseman
Building maintenance worker
Cannery worker
Mail bag handler
Houseman
Routeman's helper
Gatekeeper
Office machine operator
Bag filler
Bellhop
Shoe repairer
Window washer
Floor polisher
Newspaper deliverer
Dairy hand
Hand trucker
Locker room attendant
Doorman
Stevedore
Watchman

Source: Booklet "Preparing for Work"
The President's Committee on Employment
of the Handicapped
Washington, D.C. 20210

APPENDIX D

RECOMMENDED RESOURCES

Special sources used by the editor:

Series of Booklets
- "Preparing for Work"
- "Guide to Job Placement of the Mentally Retarded"
- "How to Get a Job"
- "Jobs and Mentally Retarded People"

A Biography of Secondary Materials for Teaching Handicapped Students

The above are available from
President's Committee on Employment
of the Handicapped
Washington, D.C. 20010

16 Briefs dealing with Problems and Issues in Vocational Education

Series of 5 booklets *Another Step Forward*
- "Mainstreaming Handicapped Students into the Regular Classroom"*
- "Characteristics of Handicapped Students"*
- "Architectural Considerations for a Barrier Free Environment"*
- "Evaluation and Placement"
- "A System of Management"

*Particularly of interest to teachers

The sixteen briefs and five booklets, developed by the University of Florida, Special Education Department are available from
National Center Publications
The National Center for Research in
Vocational Education
Ohio State University
Columbus, Ohio 43210

Vocational Education: Teaching the Handicapped in Regular Classes, Robert Weisgerber, Editor, 1978. Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091

Though the title of the book appears to be written for counselors and support personnel, it is an excellent book for teachers who want to find out more about the characteristics of specific disabilities.

Guidance, Counseling, and Support Services for High School Students with Physical Disabilities, June Foster, Project Director, 1978. Technical Education Research Centers, Inc., 44 Brattle Street, Cambridge, Mass. 02138

My special thanks to Joel Magisos, Associate Director at the National Center for Research in Voc Ed, for providing me with a group of excellent materials now available nationally.

APPENDIX E

NATIONAL ORGANIZATIONS: SOURCES OF INFORMATION

National organizations which are directly involved with handicapped needs follow. The scope and nature of their activities cover a broad range. Most of these groups, however, can provide some resource material.

Accent on Information
P.O. Box 700
Bloomington, IL 61701

American Academy for Cerebral Palsy
1255 New Hampshire Ave., N.W.
Washington, DC 20036

American Association for Gifted Children
15 Gramercy Park
New York, NY 10003

American Cancer Society, Inc.
777 Third Ave.
New York, NY 10017

American Council of the Blind, Inc.
106 N.E. 2nd St.
Oklahoma City, OK 73104

American Diabetes Association, Inc.
1 West 48th St.
New York, NY 10020

American Foundation for the Blind
15 W. 16th St.
New York, NY 10011

American Heart Association, Inc.
44 E. 23rd St.
New York, NY 10010

American Lung Association
1740 Broadway
New York, NY 10019

Association for Education of the Visually Handicapped
1604 Spruce St.
Philadelphia, PA 19103

American Printing House for the Blind
P.O. Box 6085
Louisville, KY 40206

American Rehabilitation Counseling Association
5203 Leesburg Pike, Suite 400
Falls Church, VA 22041

Association for Children with Learning Disabilities
5225 Grace St.
Pittsburgh, PA 15236

Braille Institute of America, Inc.
741 North Vermont Ave.
Los Angeles, CA 90029

Bureau of Education for the Handicapped
Department of Education
400 6th St., S.W.
Washington, DC 20202

Closer Look-National Information Center for the Handicapped
Box 1492
Washington, DC 20013

Conference of Executives of American Schools for the Deaf
5034 Wisconsin Ave., N.W.
Washington, DC 20016

Convention of American Instructors of the Deaf
5034 Wisconsin Ave., N.W.
Washington, DC 20016

Council for Exceptional Children
1920 Association Dr.
Reston, VA 22091

Council of Organizations Serving the Deaf
Box 894
Columbia, MD 21044

Cystic Fibrosis Foundation
3379 Peachtree Road, N.E.
Atlanta, GA 30326

Disability Rights Center
1346 Connecticut Ave., N.W.
Suite 1124
Washington, DC 20036

Epilepsy Foundation of America
1828 L St., N.W., Suite 406
Washington, DC 20036

Exceptional Parents
635 Madison Ave.
New York, NY 10022

Federation of the Handicapped, Inc.
211 West 14th St.
New York, NY 10011

Information Center for Hearing, Speech, and Disorders of Human Communication
310 Harriet Lane Home
Johns Hopkins Medical Institutions
Baltimore, MD 21205

International Association of Parents of the Deaf, Inc.
814 Thayer Ave.
Silver Spring, MD 20910

International Society for Rehabilitation of the Disabled
219 E. 44th St.
New York, NY 10017

Junior National Association of the Deaf
Gallaudet College
7th and Florida Ave., N.E.
Washington, DC 20002

Library of Congress
Division for the Blind & Physically Handicapped
1291 Taylor St., N.W.
Washington, DC 20542

Mainstream, Inc.
1200 15th St., N.W.
Washington, DC 20005

Mental Health Association
1800 North Kent Street
Arlington, VA 22209

Mental Health Materials Center
419 Park Ave., S.
New York, NY 10016

Muscular Dystrophy Association, Inc.
810 7th Ave.
New York, NY 10019

National Accreditation Council for Agencies Serving the Blind and Visually Handicapped
79 Madison Ave., Suite 1406
New York, NY 10016

National Amputation Foundation
12-45 150th St.
Whitestone, NY 11357

National Association for Brain-Injured Children, Inc.
48 New Port Ave.
Braintree, MA 02185

National Association of the Deaf
814 Thayer Ave.
Silver Spring, MD 20910

National Association of Hearing and Speech Agencies
814 Thayer Ave.
Silver Spring, MD 20910

National Association for Mental Health, Inc.
1800 North Kent St.
Arlington, VA 22209

National Association of the Physically Handicapped, Inc.
76 Elm St.
London, OH 43140

National Association for Retarded Children
2709 Avenue E. East
Arlington, TX 76011

National Blindness Information Center
Dupont Circle Building, Suite 212
1346 Connecticut Ave., N.W.
Washington, DC 20036

National Braille Association
85 Godwin Ave.
Midland Park, NJ 07432

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National Center for Deaf Blind Youths & Adults
105 5th Ave.
New Hyde Park, NY 11040

National Center for Law & the Deaf
7th & Florida Ave., N.E.
Washington, DC 20002

National Center for Law & the Handicapped, Inc.
1235 North Eddy St.
South Bend, IN 46617

National Education Association
Instruction and Professional Development
1201 16th St., N.W.
Washington, DC 20036

National Epilepsy League, Inc.
222 North Michigan Ave., 5th Floor
Chicago, IL 60601

National Federation of the Blind
218 Randolph Hotel Building
Des Moines, IA 50309

National Hemophilia Foundation
25 West 39th St.
New York, NY 10018

National Information and Referral Service for Autistic & Autistic-Like Persons
101 Richmond St.
Huntington, WV 25702

National Industries for the Blind
1455 Broad St.
Bloomfield, IL 07003

National Institute for Mental Health
5451 Wisconsin Ave.
Chevy Chase, MD 20015

National Multiple Sclerosis Society
205 E. 42nd St.
New York, NY 10017

National Paraplegia Foundation
333 N. Michigan Ave.
Chicago, IL 60601

National Rehabilitation Association
1522 K St. N.W.
Washington, DC 20005

National Society for Autistic Children
621 Central Ave.
Albany, NY 12206

National Society for the Prevention of Blindness, Inc.
79 Madison Ave.
New York, NY 10016

National Wheelchair Athletic Association
40-24 62nd St.
Woodside, NY 11377

New England Regional Spinal Cord Injury Center
University Hospital
75 E. Newton St.
Boston, MA 02118

Northwestern Memorial Hospital & Rehabilitation Institute of Chicago
401 E. Ohio St.
Chicago, IL 60611

Office for Handicapped Individuals
Department of Education
400 Maryland Ave., S.W.
Room 3106, Switzer Bldg.
Washington, DC 20202

President's Committee on Employment of the Handicapped
U.S. Department of Labor
Washington, DC 20210

President's Committee on Mental Retardation
Washington, DC 20201

Recording for the Blind, Inc.
215 E. 58th St.
New York, NY 10022

Regional Spinal Cord Injury Center & Department of Physical Medicine and Rehabilitation
University of Minnesota Hospitals
Minneapolis, MN 55455

Registry of Interpreters for the Deaf, Inc.
P.O. Box 1339
Washington, DC 20013

Rocky Mountain Spinal Cord Injury System
Craig Hospital
3425 Clarkson
Englewood, CO 80110

Santa Clara Valley Medical Center
California Regional Spinal Cord Injury Care System
Institute for Medical Research
751 S. Bascom Ave. H-8
San Jose, CA 95128

Society for the Rehabilitation of the Facially Disfigured, Inc.
550 First Ave.
New York, NY 10016

Spain Rehabilitation Center
University of Alabama at Birmingham
1717 6th Ave., S.
Birmingham, AL 35233

Spina Bifida Association of America
343 S. Dearborn, Suite 319
Chicago, IL 60604

United Cerebral Palsy Association
66 E. 34th St.
New York, NY 10016

United Ostomy Association
1111 Wilshire Blvd.
Los Angeles, CA 90017

United States Wheelchair Sports Fund
40-24 62nd St.
Woodside, NY 11377

University of Washington
Department of Rehabilitation Medicine
CC814 University Hospital
Seattle, WA 98195

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